Intangibles disclosure: A user-based approach to enhanced external financial reporting

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Abstract

This thesis develops a framework for enhancing current financial reporting of intangibles related information in knowledge intensive industries informed by the particular needs and requirements of the users of such reports.

Four financial statements user groups (investment fund managers, CFOs of companies, credit institutions and auditors) were interviewed to obtain an understanding of their views of the usefulness of current financial statements. Following these initial interviews, questionnaires were sent out and related interviews conducted to identify factors that would be useful for improving current financial reporting practice related to intangibles. These factors were used to build a new intangibles disclosure framework or ‘model’. This new ‘model’ was then validated with financial statements users and a representative of an accounting standards setter1 in respect of its acceptability and usefulness.

This study also explored the question of appropriate methodology for examining and developing financial accounting theory. Financial accounting research is currently undertaken in the two different fields of normative and positive accounting theory. Both have different views on what is deemed as commonly acceptable research methodologies to contribute to current knowledge. Unfortunately, neither field supports the development of financial accounting standards based on qualitative empirical research methodologies founded on the views of users of such financial accounting standards. This thesis provides evidence for the need to establish a new branch of financial accounting research: conditional-normative accounting research. In addition, this thesis also provides a process by which this new branch of financial accounting research can be operationalised.

This thesis contributes to the current knowledge in three ways:

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1 who also leads the global group of national standards setter relating to intangibles. This group belongs to the International Forum of Accounting Standards Setters, which is a global group of representatives of national accounting standards setters and related organisations whose main role is to assist the International Accounting Standards Board.
It proposes a new user-based intangibles disclosure framework model for knowledge intensive industries which was developed and validated based on qualitative empirical research methodology.

It contributes to the establishment of a new branch of financial accounting theory which is referred to by Mattessich (1995) as conditional-normative accounting theory. The latter consists of financial accounting norms and policy recommendations developed through the application of qualitative empirical research methodologies.

It provides a process by which the concept of conditional-normative accounting theory can be operationalised in research practice.
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### Glossary of terms

<table>
<thead>
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<th>Term</th>
<th>Description</th>
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<tbody>
<tr>
<td>AASB</td>
<td>Office of the Australian Accounting Standards Board</td>
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<tr>
<td>CFFR</td>
<td>Conceptual Framework for Financial Reporting</td>
</tr>
<tr>
<td>CFOs</td>
<td>Chief Financial Officers</td>
</tr>
<tr>
<td>CondNAR</td>
<td>Conditional-Normative Accounting Research</td>
</tr>
<tr>
<td>CondNAT</td>
<td>Conditional-Normative Accounting Theory</td>
</tr>
<tr>
<td>DCF</td>
<td>Discounted Cash Flow</td>
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<tr>
<td>DIC</td>
<td>Direct Intellectual Capital</td>
</tr>
<tr>
<td>FASB</td>
<td>Financial Accounting Standards Board</td>
</tr>
<tr>
<td>FiMIAM</td>
<td>Financial Method of Intangible Assets Measurement</td>
</tr>
<tr>
<td>IAS</td>
<td>International Accounting Standard</td>
</tr>
<tr>
<td>IASB</td>
<td>International Accounting Standards Board</td>
</tr>
<tr>
<td>IDF</td>
<td>Intangibles Disclosure Framework</td>
</tr>
<tr>
<td>IFAC</td>
<td>International Federation of Accountants</td>
</tr>
<tr>
<td>IFMs</td>
<td>Investment Fund Managers</td>
</tr>
<tr>
<td>IFRS</td>
<td>International Financial Reporting Standards</td>
</tr>
<tr>
<td>KnowVRM</td>
<td>Knowledge Valuation and Reporting Model (other term for IDF model)</td>
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<tr>
<td>MC</td>
<td>Market Capitalisation</td>
</tr>
<tr>
<td>NAT</td>
<td>Normative Accounting Theory</td>
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<tr>
<td>PAT</td>
<td>Positive Accounting Theory</td>
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<tr>
<td>R&amp;D</td>
<td>Research and Development</td>
</tr>
<tr>
<td>ROA</td>
<td>Return on Assets</td>
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<tr>
<td>SC</td>
<td>Scorecard</td>
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<tr>
<td>VAIC</td>
<td>Value Added Intellectual Coefficient</td>
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Author's Declaration

I declare that the research contained in this thesis, unless otherwise formally indicated within the text, is the original work of the author. The thesis has not been previously submitted to this or any other university for a degree, and does not incorporate any material already submitted for a degree.

13 February 2017
Chapter 1  Introduction

1.1  Introduction

This first chapter introduces the study. It sets out the aims and objectives of the study (section 1.2), putting it in the context of previous research (section 1.3) and explains why this study is needed and how it contributes to the existing body of knowledge (1.4). Section 1.5 provides an overview of the structure of the thesis.

1.2  Aim and objectives of the research

The aim of this research study is to enhance the usefulness of financial statements in respect of intangibles\(^2\) related financial information for their users, i.e. to derive and propose an intangibles related disclosure framework that is useful and relevant to the needs of users, acceptable to providers, auditors and standard setters and improves currently published financial statements. Several research objectives are defined to achieve the aim:

- Understanding the needs and views of financial statement providers, users and auditors in relation to the disclosure of information on intangibles;
- Identifying factors that will improve the current practice of financial reporting with regard to intangibles in currently published financial statements;
- Developing an intangibles disclosure framework (IDF) model that meets the users’ needs, improves on current disclosure and is acceptable to providers, auditors and potentially to standard setters;
- Validating\(^3\) the acceptability and efficacy of the model derived with all the constituencies identified above.

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\(^2\) The term intangibles is defined as a non-financial resource without physical substance from which future economic benefits (due to a competitive advantage) are expected to flow to a company. Refer to section 2.1.2 for further discussions and details.

\(^3\) The term “validating” is used in the following instead of “testing” as the latter term is often associated with deductive research using quantitative methods (e.g. Collis et al., 2009; Smith, 2009; Corbin and Strauss, 2008; Creswell, 2007)
This research study contributes, through the aim, objectives and particular methodology applied to achieve these aim and objectives, to the new branch of financial accounting theory, which is referred to in this study as conditional-normative accounting theory (CondNAT).

1.3 Background and delimitation of the research

Many authors in the literature believe that current financial statements are no longer useful. One of the main reasons is the lack of useful intangibles related information in financial statements (e.g. Edvinsson, 2013; Jones, 2011; Kang and Gray, 2011; Ousama et al, 2011; Vafaei et al., 2011; Holland, 2009; Lev et al., 2009; Lev, 2008; Li et al., 2008; Brás and Rodrigues, 2007; Ritter and Wells, 2006; Barth et al., 2001; Berkowitz, 2001; Lev, 2001; Lev and Zarowin, 1999).

Those views are derived either from the personal observations of the authors or by research in the field of positive accounting theory (PAT) (e.g. Garanina et al., 2014; Nold, 2012; Patel and Narain, 2009; Wyatt, 2008; García-Meca and Martinez, 2007; Gosh and Wu, 2007; Tan and Lim, 2007; Trueman et al., 2000; Chandra et al., 1999; Lev and Zarowin, 1999; Amir and Lev, 1996). As a result, many proposals have been made for different types of intangibles measurement and reporting apart from the financial statements.

On the other hand, financial accounting research and related policy recommendations remain the domain of normative accounting researchers such as Skinner (2008a, 2008b), who critically assess accounting rules and base policy recommendations on their personal opinions, but generally do not perform research studies using qualitative or quantitative research methods to support their arguments. They assume that they know the views and needs of financial statements users, but generally do not validate their assumptions or provide empirical evidence for their claims based on widely accepted empirical research methodologies. Empirical research about intangibles related disclosures and respective policy recommendations is not even on
the agenda of the respective research community (Gerpot et al., 2008). The latter together with the nature of intangibles and the current financial accounting rules hinder tremendously the development of financial accounting for intangibles (Yallwe et al., 2014).

Therefore, the key question arising from current research and debates in respect to intangibles in financial reporting is what are the particular views and needs of financial statements users in respect of intangibles related information in current financial reporting. Based on this key question and the respective responses provided directly by financial statements users, an IDF model is developed, which is an empirical research based improvement of current financial reporting.

This study assumes as a prerequisite the usefulness criterion as established in the conceptual framework of the IASB (2010) - i.e. the objective of general purpose financial reporting is to provide capital providers, as primary users, financial information that is useful in making decisions about the resources they provide to an entity (OB2 of IASB 2010; BC 1.26 of IASB 2010). Therefore, an assessment of the appropriateness of the criterion usefulness for general purpose financial reporting such as IFRS, related in particular to, for example, social welfare, is beyond the scope of this research.

In this regard, this research thesis does not only contribute to the financial accounting literature by presenting the first IDF model that is derived from the views of financial statements users and that is empirically validated for usefulness with them. It also contributes to a new branch of financial accounting theory and related research that can be referred to as CondNAT or conditional-normative accounting research (CondNAR), respectively.

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4 Some financial accounting standard setters have recently set up research centers (e.g. www.ifrs.org/IFRS-Research/Pages/IFRS-Research-Centre.aspx, last retrieval 16 August 2016). Their primary role is to support the standard setters in their own research programs by leveraging and drawing upon internal and external resources and engagements with the academic community. However, they do not seem to establish and foster new methodologies for financial accounting research.

5 Such an assessment could be found, for example, in Puxty et al. (1983) and Laughlin et al. (1981). Refer also to section 3.1.
1.4 The need of this study

As described in the previous section, an IDF model for financial reporting, which is empirically derived from the needs and requirements of financial statements users and that is useful for them, is missing. This new model would enhance the usefulness of financial statements in general, which are currently deemed as lacking usefulness for financial statements users. Therefore, this study is needed to develop such an IDF model in order to improve the usefulness of current financial reporting.

Moreover, financial accounting research is currently performed in the two fields of normative accounting theory (NAT) and PAT, which both have different views on commonly accepted research methodologies to contribute to current knowledge in the respective fields. Unfortunately, neither field supports an approach to develop financial accounting standards policy recommendations based on in-depth empirical research with the addressees of these standards, namely financial statements users. Therefore, this study is also needed to show the relevance of establishing a new branch of financial accounting research: CondNAR.

1.5 Structure of the thesis

This section provides a brief overview of the structure of the thesis and outlines the contents of each chapter. The structure of this thesis follows the research process. This is different to a common structure in quantitative empirical research studies that can be generally described as ‘introduction-literature review-methodology-analysis/findings-conclusion (e.g. Smith, 2009; Corbin et al., 2008; Bryman, 2001).

Theoretical frameworks, which also provide some sort of structure for research work, are very common in quantitative research, but much less common and clear in qualitative research (Corbin et al., 2008). Bryman (2001) notes that research writing is about convincing the reader about the claims that are made. Good writing therefore relates to developing a style and structure that is persuasive and convincing and is not determined by a generally applicable theoretical framework. This is in particular important in qualitative research as most studies, same as this research study, begin with a general question or research problem and are refined and further specified in the course of the research and often requires further data collection and analysis.
Researchers should even innovate to convey knowledge through their writing (Drisko, 2005). Not a predefined structure matters, what is important is that the purpose, methods and findings are both accessible and appealing independent of a particular structure (Caputo, 2004). Davis et al. (2000) put it in this way: Many research books tend to reinforce unoriginal writing by providing maps of conventional routes of academic writing as well as standardized concepts of how academic writing should look. Students who have learnt such conventional rules may have an “apparent unwillingness or inability to think imaginatively or originally”. As he claims, they know how to present the knowledge by others, write within a set of conventions and produce what they have been conditioned to believe teachers wish to see, but they lack in providing originality (Davis et al., 2000, p.425). Hence, research writers should disregard predefined structures and better imagine themselves in a conversation with their readers (Booth et al., 2008). In this respect each research thesis structure should become almost the only one of its kind as each research is different as it is also suggested by Griffin as a prerequisite for good research writing (Griffin, 1995).

Therefore, a chronological emergent approach is adopted for this study where the research problem is at the centre. This structure is also supported by, inter alia, Wolcott (2009), Moses et al. (2007) and White (1987). The initial research problem has related to the first research objective, i.e. understanding the needs and views of financial statement providers, users and auditors in relation to the disclosure of information on intangibles. This initial problem has established the basis and direction for the subsequent research steps, i.e. in the course of this research project, the initial research problem has been further refined, specified and extended from which the need for further data collection and analysis emerged.

The following figure provides an overview of the research process and hence thesis structure:
Chapter 1 explains the aim and objectives of this research, the background and delimitations as well the need for this study.

Chapter 2 reviews the existing literature as regards intangibles related information to external users of financial reports. Essential issues relating to intangibles related information to external parties are outlined and relevant propositions6 and respective questions are derived from these issues (step 1 in the research process shown in Figure 1.1). The literature review also paves the way for the methodological approach adopted in this study.

Chapter 3 explains the principles of and reasons for adopting the chosen empirical research methodology (step 2 in Figure 1.1). The results from the empirical research are shown and discussed in section 3.3 (step 3 in Figure 1.1). At this stage of the research, it became obvious that a new IDF model was required. Hence, additional research was necessary to identify the possible components of a new model (steps 4 and 5 in Figure 1.1) (red dotted lines). The various components for a new IDF model are summarised in section 3.5. This chapter also provides – with the components for the new model – the building blocks for the next chapter.

6 The term “proposition(s)” is used in the following instead of “hypothesis”/“hypotheses” as the latter is associated with deductive research using quantitative methods (e.g. Collis et al., 2009; Smith, 2009; Corbin and Strauss, 2008; Creswell, 2007). Refer also to previous footnote as regards “validating” and “testing”. The pair of terms “proposition(s)” and “validating” are used throughout the thesis.
Chapter 4 provides a framework for the sound building of the new IDF model (step 6 in Figure 1.1). The framework is necessary to compose the various components identified in chapter 3 in a reasonable and acceptable manner (blue dotted lines). After the development of the new model, the new IDF model is described in detail (step 7 in Figure 1.1).

Chapter 5 generally describes the validation of the new IDF model. It explains the basis for the chosen methodology as well as the reasons for raising the propositions and posing the related questions. The results from the empirical validation of the new model are discussed. It is finally shown that this study contributes to the current knowledge of financial accounting theory in two ways: a new IDF model is developed directly derived from the needs and requirements of financial statements users as a proposal for a revision of current financial accounting rules as well as a contribution to a new branch of financial accounting theory and related research, so-called CondNAT or CondNAR, respectively (steps 8 and 9 in Figure 1.1).

Chapter 6 provides the conclusion to this study. It summarises the research findings and results, revisits the aim and objectives of this study, expresses recommendations to financial accounting standards setters, highlights the contribution (and its limitations) of this study to current knowledge and provides further directions for future research. This chapter, and the overall thesis, is closed by some final thoughts.
Chapter 2  Literature review

The aim of this chapter is to provide the theoretical background of intangibles relevant to external disclosure. More particularly, intangibles are discussed from different perspectives:

- the literature on intangible assets, intellectual capital and knowledge assets, particularly relating to the meaning and definition of intangible assets vs. related terms such as intellectual capital and knowledge (section 2.1);
- the literature on external disclosure frameworks for intangibles (section 2.2) including intangible assets disclosure under current financial reporting frameworks as promulgated by regulators (section 2.2.1) as well as outside any such specific regulatory financial reporting framework (section 2.2.2);
- the literature on the measurement and valuation of intangibles (section 2.3).

The discussion also takes account of the International Financial Reporting Standards, commonly referred to as IFRS, as issued by the International Accounting Standards Board (IASB), as a particular reference for financial accounting and reporting regulation. The IFRS are the most widely used external accounting standards in the world7.

After having discussed the different perspectives on intangibles, a practical illustration of these issues and related challenges in knowledge intensive industries such as the biotech industry is provided (section 2.4). In the course of the literature review, different propositions are derived, which are empirically validated in chapter 3. Section 2.5 concludes on the various intangibles related issues. It establishes the basis for chapter 3 – the first empirical research part – and provides a summary of the key issues as well as propositions and related questions as discussed in the previous sections of this chapter.

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7 Refer to http://www.iasplus.com/en/resources/use-of-ifrs or to the following chapters for more details.
2.1 Meaning and definition of intangibles as non-physical items

2.1.1 Definition of intangible assets in financial accounting regulations

According to International Accounting Standard (IAS) 38.8\(^8\), issued by the International Accounting Standards Board (IASB), an intangible asset is an identifiable non-monetary\(^9\) asset without physical substance, whereas an asset is a resource controlled by an entity as a result of past events and from which future economic benefits are expected to flow to the entity.

An asset is identifiable if it either (a) is separable, i.e. is capable of being separated or divided from the entity and sold, transferred, etc. regardless of whether the entity intends to do so or (b) arises from contractual or other legal rights, regardless of whether those rights are separable from the entity or from other rights and obligations (IAS 38.12).

Therefore, several non-physical related items such as skilled staff (IAS 38.15), often customer relationships and market shares (IAS 38.16), scientific or technological knowledge, processes and systems, trademarks as well as network effects are not deemed to be intangible assets because of the lack of one of the properties as defined above. Even if the definition of an intangible asset is met, intangible assets can only be recognised if (a) it is probable that the expected future economic benefits that are attributable to the asset will flow to the entity and (b) the cost of the asset can be measured reliably (IAS 38.21; IAS 38.18).

The term intangible asset is mainly used in formal accounting terms, particularly in external reporting standards. It is clearly defined to meet a specific accounting regulation objective.

It should be obvious that a definition of intangible assets from accounting regulatory textbooks only encompasses a limited number of specific non-physical items,

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\(^8\) IFRS are used as a representative of accounting regulation even though other accounting standards setters have similar rules.

\(^9\) A non-monetary asset is the opposite of a monetary asset: a monetary asset is money held or an asset to be received in fixed or determinable amounts of money (IAS 21.8; IAS 38.8).
disregarding several non-physical items, and therefore is rather too narrow to reflect a broader class of an almost unlimited number of non-physical items. This is also beyond what an accounting regulator deems to be appropriate to be recognised in the financial statements at the current time.

Hence, the following discussion is concerned with what constitutes a broader class of non-physical items in respect to business and accounting. Several different terms used in the literature relating to non-physical items are discussed and the main differences and similarities between them emphasised. Those terms generally constitute different and broader classes of non-physical items compared with the intangible assets referred to in official financial accounting regulation such as IFRS.

**2.1.2 Intangible assets vs. other non-physical items**

Considerable confusion prevails in the discussion of what different terms such as ‘knowledge’ and ‘intellectual capital’, compared with ‘intangible assets’ as defined by regulators, should mean exactly and to what extent they mean the same. As indicated in the previous section, the term intangible asset is most often used in relation to official financial accounting regulation. Therefore, it is often used in a more restrictive manner to meet accounting objectives rather than covering a wide range of non-physical phenomena and related items. Other non-accounting standard terms such as knowledge and intellectual capital are less clearly defined in the literature. Generally, authors use different terms such as knowledge, knowledge capital, intangible assets, intellectual capital or human capital for similar meanings (e.g. Castilla-Polo et al., 2016; Castro, 2008; Fincham et al., 2003b;). They often define each of these terms for their own purpose (e.g. Cardao-Pito, 2012). No consensus has yet been found on one set of terms and definitions (e.g. Dumay, 2016; Kristandl et al., 2007; Kaufmann et al., 2004; Bukh et al., 2001; Bontis et al., 1999). Different terms are used for different purposes and in different contexts such as financial accounting (e.g. FASB, 2001; IAS 38.8), strategic or organisational theory (e.g. Dumay et al., 2013; Guthrie et al., 2012; Andreou et al., 2007; Fang et al., 2007; Lai, 2007). The complexity behind the different terms for non-physical items seems to make it difficult for most authors to clearly differentiate between the different
terms used in the literature. However, in most cases they have essentially the same or similar meaning.

Note that the popular intangible element ‘goodwill’ under accounting standards, which can be recorded if it is acquired, includes the intellectual capability of the organisation as well as its customer retention, good name, etc. It is only assigned a value after a company is sold, since it is only at this point in time that goodwill can be objectively measured as the difference between the sum of the fair values of all identifiable assets and purchase price according to the regulator. As Edwards and Bell already argued in 1961, measurable goodwill that arises when a company is sold was obviously there before it is sold (Edwards et al., 1961).

According to Ipsos Mori (2010, p.4), “intangible assets encompass a range of intellectual and other properties which many large companies view as among their most valuable attributes and as a powerful source of competitive advantage. Assets with no physical properties, such as brands, know-how, patents, trademarks, registered designs and copyrights, have become increasingly important […] towards a knowledge and service-based economy in the last decade”. This definition refers to assets with no physical properties which are deemed as valuable attributes and as a source of competitive advantage of companies. Dumay (2016, p.169) defines it similar, but uses the term intellectual capital and defines it as “the sum of everything everybody in a company knows that gives it a competitive edge […] Intellectual Capital is intellectual material, knowledge, experience, intellectual property, information […] that can be put to use to create [value]”. The OECD (2013, p.14) has defined the term intangible asset in a negative, but in this regard more precise manner as it excludes financial assets from the definition: it is “something which is not a physical asset or a financial asset, which is capable of being owned or controlled for use in commercial activities”.

In the following sections of this thesis, a distinction is made between the terms ‘intangible asset(s)’ and ‘intangible item(s)’10. The term intangible item(s) is based on the definitions provided in the previous paragraph by Ipsos Mori (2010), Dumay (2016) and the OECD (2013). It is defined as a non-financial resource without

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10 Intangible item(s) are sometimes also referred to “intangible(s)” or “knowledge” only. They are used interchangeably.
physical substance from which future economic benefits (due to a competitive advantage) are expected to flow to a company. It is a condensed version of the definitions provided by Ipsos Mori (2010), Dumay (2016) and the OECD (2013). Therefore, the term intangible item(s) is broader compared to the definition of the term intangible asset(s) as discussed in the previous section 2.1.1. The term intangible asset(s) is only used where reference is explicitly made to authoritative definitions in financial accounting standards such as IAS 38. Therefore, the term intangible asset(s) refers to a particular and more restrictive definition in financial accounting regulations such as IAS 38 compared to the term intangible item(s). Consequently, intangible assets are a subset of intangible items.

Even though the term intangible asset(s) is only used with reference to official financial accounting definitions, the term intangible item(s) may be occasionally replaced by other similar terms such as knowledge, intangible(s) or intellectual capital; the latter terms may be used interchangeably.

2.1.3 The practical issue – what is the understanding of financial statements users?

It has become obvious that different terms are used in the literature for knowledge and intangibles and even more that a widely accepted positive definition of intangibles and knowledge is lacking (Guthrie et al., 2012; Moeller, 2009; Abeysekera, 2008a; Gerpott et al., 2008; Kristandl and Bontis, 2007; Bontis, 2001). The lack of a commonly accepted definition might even negatively impact the development of the related research about knowledge and intangibles11 (Kristandl and Bontis, 2007; Molbjerg-Jorgensen, 2006; Andriessen, 2004a; Adrissen, 2004b; Yates-Mercer and Bawden, 2002; Bontis et al., 1999; Sveiby, 1997). It is important for this study to understand how constituencies would define them. It appears from the above review that the literature is still in its infancy in this respect or as expressed by Kristandl and Bontis (2007), the literature in this field is in its embryonic stage. Therefore, it cannot be expected or reasonably assumed that the terms knowledge or

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11 For example, it is difficult to measure something that cannot be described and defined reasonably precisely, as discussed in the following sections (see also Spender and Marr, 2006; Boisot, 1998).
intangibles are common sense and that all constituencies are aware of one common and clear definition. This makes it necessary and important to understand what constituencies understand in this regard. This should give a better understanding of the answers of the interviewed constituencies and can put them into an appropriate context. A user-based definition might also be used to shape the (theoretical) definition of knowledge and intangibles as defined in the previous section; it may even be used as a commonly acceptable definition driven by users. Therefore, the following proposition will be validated with constituencies in chapter 3:

**P1: Constituencies have a different understanding about the meaning of knowledge among each other and compared with the literature**

Following the discussion above on the various definitions and meanings of knowledge and intangibles in the literature, different measurement and disclosure approaches are described in the following sections. Financial accounting standards for external financial reporting such as those from the IASB, which are used as an illustration of financial accounting regulation throughout the thesis, are discussed first as a regulatory disclosure framework.

### 2.2 Current disclosure of intangible assets

Disclosures of intangibles can generally be made in two ways: reporting using a regulatory accounting framework such as the IFRS or reporting using other, in most cases unregulated disclosure frameworks (Wee et al., 2016; Gallardo-Vazquez, 2016; Dumay, 2016; Jankensgard, 2015; Nielsen et al., 2015). The term disclosure is used here more generally as making something known or revealing something which was previously unknown (Dumay, 2016; Webster’s New World College Dictionary,

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12 A summary of all propositions can be found in Appendix I.
13 The IFRS are developed and promulgated by the IASB. According to the IASB, over 100 countries have required or permitted the use of IFRS since 2001 (http://www.iasb.org/NR/rndOnlyres/95C54002-7796-4E23-A327-28D23D2F55EA/0//April09Whoweareandwhatwedo.pdf). Deloitte publishes on its IFRS website 174 countries in which companies are permitted or required to apply IFRS (http://www.iasplus.com/en/resources/use-of-ifrs) as of 3 April 2016. IFRS are therefore the most widely accepted accounting standards worldwide. Thus, they are used as the main financial accounting standards reference.
As part of regulatory accounting frameworks, the term disclosure is also used if a summary of significant accounting policies and other explanatory information should be provided as a footnote to the different statements as part of a complete set of financial statements to existing and potential investors, lenders and other creditors in making decisions about providing resources to the entity (IAS 38; OB2 and QC2 of IASB (2010); Hirshleifer et al., 2003; IAS 1). The latter definition is only referred to throughout this thesis where explicitly stated.

The term reporting is often used with regard to financial information, i.e. information about economic resources, claims against the reporting entity and the effects of transactions and other events and conditions that change those resources and claims of an entity under consideration that is provided to external interested parties such as existing and potential investors, lenders and other creditors for making decisions about that entity. This also refers to information about the economic phenomena of the reporting entity. In this sense, financial reporting refers to making such information available to external parties (QC1 and QC2 of IASB (2010)). In the context of financial reporting, financial statements portray the financial effects of transactions and other events by grouping them into broad classes termed elements of financial statements according to their economic characteristics (section 4.2 of the IASB (2010)). Additional and explanatory information to these financial statements is reported as disclosure as described above.

In summary, financial statements are components of the overall financial reporting of an entity to external parties under a financial accounting framework. Even though disclosures under financial accounting frameworks are only a part of overall financial reporting, the term disclosure as used here is beyond the restrictive meaning under financial accounting frameworks. It includes here, but is not limited to, the respective

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14 They consist of (a) a statement of financial position as at the end of the period and at the beginning of the earliest comparative period; (b) a statement of comprehensive income for the period; (c) a statement of changes in equity for the period; and (d) a statement of cash flows for the period (IAS 1). Including the notes to them, they constitute a complete set of financial statements.

15 Internal users such as management are not the intended beneficiaries. Therefore, investors, lenders and creditors are the intended beneficiaries of such financial reporting and, consequently, IFRS do not make any explicit reference to 'external' financial reporting rather than financial reporting (BC1.7 of IASB (2010)).
financial reporting in addition to other disclosures outside financial accounting frameworks as stated above.

2.2.1 Reporting under current IFRS

2.2.1.1 Purpose of external financial reporting

According to the IASB, the objective of general purpose financial reporting is to provide financial information about a reporting entity that is useful to external parties such as existing and potential investors, lenders and other creditors in making decisions about providing resources to the entity. Those decisions may involve buying, selling or holding equity and debt instruments, and providing or settling loans and other forms of credit (OB2 of IASB (2010)).

The IASB understands that such decisions:

- by investors depend on the returns that they expect from their investments such as dividends, principal and interest payments or market price increases;
- by lenders and other creditors about providing or settling loans and other forms of credit depend on the principal and interest payments or other returns that they expect (OB3 of IASB (2010)).

In view of the accounting standards setter, investors, lenders and other creditors’ expectations about returns depend on their assessments of the amount, timing and uncertainty of (the prospects for) future net cash inflows to the entity. Consequently, they need information to help them assess the prospects for future net cash inflows to an entity (OB3 of IASB (2010)). This includes information about the resources of the entity, claims against the entity and how efficiently and effectively the entity’s management and governing board have discharged their responsibilities to use the entity’s resources (OB4 of IASB (2010)). The IASB points out that general purpose financial reports are not designed to show the value of a reporting entity, but they should provide information to help external parties estimate the value of the reporting entity (OB7 of IASB (2010)).
However, the IASB makes clear that general purpose financial reports do not and cannot provide all the information that the various external parties might need (OB6 of IASB (2010)). Such information refers to information on general economic conditions and expectations, political events and climates as well as industry outlooks as stated by the IASB (OB6 of IASB (2010)). Even though individual users have different and possibly conflicting information needs and desires, the IASB, in developing financial reporting standards, will seek to provide the information set that meets the needs of the maximum number of primary users (OB8 of IASB (2010)). In this respect, the IASB aims to capture all information needs that are at least common among external parties, but that also allows a reporting entity to include in the financial reports additional information that is most useful to a particular subset of primary users (OB8 of IASB (2010)).

While this research study is based on the current purpose of financial reporting illustrated by the IASB’s financial accounting framework - i.e. providing decision-useful information to those providing resources to an entity - the purpose of financial accounting regulation could also be different. It is interesting to note that in the course of developing the first two chapters of the IASB’s current conceptual framework - i.e. a chapter about the objective of financial reporting and another chapter for the qualitative characteristics and constraints of decision-usefulness financial reporting information - the boards of the IASB and FASB considered in their April 2005 joint meeting stewardship and accountability in addition to usefulness as an objective of financial reporting. They have asked their staff to further analyse it (IASB, 2005). The staff recognized various definitions of stewardship in the literature. They explained that managers perform a stewardship function and, as a result, they can be held accountable for their actions (refer also to OB12 of IASB, 2008). Furthermore, the performance of an entity in general cannot be separated from the performance of those who manage it. However, the staff believe that financial reporting can only provide information about an enterprise during a period when it was under the direction of a particular management, but does not directly provide information about that management’s performance. It is a question of whether financial reporting is capable of providing all of the information needed to assess a manager’s stewardship or only certain information that is useful to others to assess a manager’s stewardship indirectly through the assessment of a company’s performance for a specific period (IASB, 2005). The IASB board supported the latter and has taken the view that financial information that is useful in making economic decisions would also be helpful in assessing how management has fulfilled its stewardship responsibility (IASB, 2010, BC1.24) According to IASB BC1.27 (2010), the IASB board did not intend to imply that assessing either usefulness or stewardship is more important than the other. Both are important for making decisions about providing resources to an entity, and information about stewardship is also important for resource providers who have the ability to vote on, or otherwise influence, management’s decisions. However, IASB BC1.28 (2010) states that they have decided not to use the term stewardship because they believe that it would be difficult to translate it into other languages. Instead, the IASB describes what stewardship encapsulates. In the IASB new exposure draft ED 2015/3 (IASB, 2015), related to the conceptual framework, the IASB proposes to change its view again as regards stewardships due to some responses to earlier exposure drafts, particularly as
follows: “...lenders' and other creditors' expectations about returns depend on their assessment of the amount, timing and uncertainty of (the prospects for) future net cash inflows to the entity and their assessment of management's stewardship of the entity's resources. Consequently, existing and potential investors, lenders and other creditors need information to help make those assessments” (ED 2015/3, section 1.3). IASB proposes to make the term stewardship more prominent, although nothing changes in substance in their view (ED 2015/3, section BC 1.9). The IASB has reacted based on some discussions since the financial crisis that stewardship should be at least as important as decision-usefulness as an objective of financial statements (Kuhner et al., 2015; Whittington, 2008). This equal importance could mean either a significant reworking of all standards issued by the IASB or that the IASB may effectively not apply usefulness and stewardship pari passus, but rather in the way already explained in 2005 (IASB, 2005). As a consequence, the standard IASB setting process should be monitored carefully in future. 17 Laughlin et al. (1983) introduced in their article, in which the political process of standard setting in the light of the problem of the conceptual framework and its viability is analysed, alternative perspectives on accounting regulation which consist of four levels: (1) accounting regulation needed vs. not needed; (2) if needed (as they assume), accounting problems can be solved by reference to a conceptual framework vs. a mere political consensus; (3) if a conceptual framework is referred to (as they also assume necessary), accounts as maps vs. accounts being designed with purpose in mind; and finally, (4) if accounts are designed with a purpose in mind (they strongly believe that accounts must be purpose-orientated), the purpose could be based on the following perspectives: (a) decision-usefulness for the user; (b) organizational usefulness or (c) synthesis. The first level addresses the question of whether accounting regulation is needed or not: it is assumed that some regulation of providers is needed (refer also to Merino et al. 1982; Alexander et al., 2011). The second level is about whether accounting regulation should be based on a conceptual framework or on political consensus. Laughlin et al. (1983) have further analysed the political consensus process and come up with a new approach of ‘worldview’, which could be further divided into a user worldview and an organizational worldview, compared to (self-) interest to be used in the standard setting process. According to the authors, standard setters such as the IASB (but also the FASB) take a user worldview approach that relates to the information needs of users, although they would prefer an organizational worldview approach which is more concerned with the survival and growth of enterprises. With the introduction and development of conceptual frameworks such as that of the IASB, a political consensus process is replaced by a process that is primarily based on a rich(er) conceptual framework and which relies less on political consensus. Although this research thesis is based on the decision-usefulness criterion given by the IASB, the research could also have been reformulated and expanded to address empirically the question of whether a user worldview is more reasonable than an organizational worldview, illustrated by this empirical case study related to intangible disclosures. As the latter is beyond the scope of this thesis, a further detailed analysis of the theory related to the political process of standard setting, including more recent developments such as repoliticalization (Bengtsson, 2011), is not made. For further details, refer to, for example, Tinker et al. (1994), Willmott (1984) and Laughlin et al. (1983). The third level refers to whether the primary purpose of financial accounts is represent events by appropriate measures or the function the accounts perform—i.e. they are designed primarily with a purpose in mind. This distinction may not be clear-cut: they may potentially conflict or they may have different concerns. However, Laughlin et al. follow a purpose-orientated approach as promoted by Mattessich (1964; 1970; 1972), which has led to a claim for more empirical research in accounting (Laughlin, 2007; Laughlin, 2004; Laughlin, 1995; Mattessich, 1980) and Mattessich’s conditional-normative accounting theory (1995; refer also to section 3.2.1). Indeed, and on a separate note, Mattessich has made a lasting impression on Laughlin’s academic work; Laughlin has taken
Decision-usefulness is assumed to be paramount under IFRS, as financial reporting under IFRS is produced for users. However, the IASB does not provide a detailed analysis of the term ‘decision-useful’. It rather defines it by two other terms, namely relevance and faithful representation, or instead, until recently, reliability (refer also to section 2.2.1.2). According to Laughlin et al. (1983), major schools of thought related to decision-usefulness can be (although not with a clear-cut categorization), classified into either a ‘weak’ user orientation or a ‘strong’ user orientation. Greater emphasis on relevance belongs to the stronger class, whereas greater emphasis on reliability (and hence weaker emphasis on relevance) pertains to the weaker class. The strong and weak user orientation is similar to Wheeler’s ‘data orientation’ and ‘decision orientation’, respectively (Wheeler, 1970). The weak user-orientated class consists of at least four major subclasses: income, events, predictive ability and welfare/information economics. The strong user-orientated class includes two major sub-classes: decision models and decision makers (refer also to Sterling, 1970). They may also refer to information that decision makers say they want to have and what decision makers actually need. These may be the same if the decision makers use an ideal decision model which will achieve its objective. Decision maker research may be further divided into research into individual needs (and behaviours) and research into market needs (refer also to Hofstedt, 1976). The former also considers how and how well decision makers process information for their use. This school of thought refers to human information processing. It should be clear that the term ‘decision-usefulness’ can be manifold. All these schools consider decision-usefulness from a different angle; hence they may very likely have a different understanding of what decision-usefulness means. While the IASB may assume it is clear, it does not seem to be that clear.

Despite the critical analysis of the decision-usefulness criterion and the proposal of an alternative external accounting approach termed organizational control (Puxty et
al., 1983); Laughlin et al. (1981)), the decision-usefulness criterion has largely persisted and is undoubtedly a core principle in the IASB framework (Laughlin, 2007).

It can be concluded from the IASB objectives that financial reports should provide at least all the company-specific information necessary to allow a maximum number of external users to arrive by themselves at a company’s value. This is discussed further in the chapters that follow.

It is important to emphasise that to a large extent financial reports are based on estimates, judgments and models rather than exact depictions. Even though the IASB admits that the vision for the conceptual framework of ideal financial reporting is unlikely to be achieved in full, at least not in the short-term, because it takes time to understand, accept and implement new ways of analysing transactions and other events, it deems it as essential to strive towards such visions and goals to improve the usefulness of financial reporting (OB11 of IASB 2010)).

In addition to these conceptual visions, goals and purposes promulgated by accounting standards setters such as the IASB, many authors in the literature argue that financial statements are no longer useful, as they do not provide decision-useful information in respect of intangibles (Holland, 2009; Boesso et al., 2007; Nielsen et al., 2006; Wallman, 2005; Bozzolan et al., 2003; Eccles et al., 2003; Eng et al., 2003; Garcia-Ayuso, 2003; Holland, 2003; Aboody and Lev, 2002; Joos, 2002; Seetharaman et al., 2002; Barth et al., 2001; Seetharaman et al., 2001; Beattie, 1999; Lev et al., 1999; Lev and Zarowin, 1999; Holland, 1998; Amir and Lev, 1996; Lev and Sougiannis, 1996; Wallman, 1996; Wallman, 1995; AICPA, 1994).

Several authors among those identified above particularly refer to knowledge intensive companies whose objectives are to render services or to carry out research, i.e. those that primarily work and trade in areas where human capabilities and intellectual resources are particular important. However, the majority of empirical

external accounting should have the same basic function, which is to design its information content in relation to the needs of the organization—i.e. increase organization effectiveness to achieve the goals. According to the authors, the organizational control approach will lead to social welfare, whereas improvements in information disclosures related to the user-orientated approach do not necessarily lead to greater welfare.
studies refer to the so called “value relevance studies” that explain the relevance of certain information within financial statements by using proxies for the attributes under consideration. These studies mainly relate to PAT\textsuperscript{21}. They aim to prove the usefulness of particular financial statement elements by using various proxies, particularly market information, to represent the views of financial statements users. Unfortunately, they do not go back to the origins, i.e. directly to financial statements users, to provide direct insights into their views. Moreover, they do not provide particular suggestions on how financial statements should be changed to enhance usefulness. Thus, value relevance studies remain subject to criticism, as they do not necessarily adequately reflect the views of financial statements users but rather measure something different such as general psychological effects in the financial market (Valladares and Cuello de Oro Celestino, 2007; Francis and Schipper, 1999). Consequently, to understand clearly the usefulness of financial statements for their users, the drawbacks of value relevance studies have to be overcome by directly exploring the usefulness with users themselves instead of using proxies for them\textsuperscript{22}. Therefore, financial statements users’ understanding about whether financial statements still meet their general purpose has to be directly explored with them. The following proposition, as derived from the literature above, will be validated to clarify the widely expressed view in the literature that financial statements do not meet their original purpose:

P2: Financial statements no longer fulfil their original purpose.

There are questions posed relating to this proposition to understand how financial statements users currently use financial statements. This clarification is particularly important, as it seems that the value relevance literature assumes a different purpose for financial statements than that outlined by financial accounting standards setters and described by normative accounting researchers\textsuperscript{23}.

For example, the IASB (2010) stipulates that general purpose financial reports are not designed to show the value of a reporting entity, but to provide information to

\textsuperscript{21} Refer to chapter 3 for more details on value relevance studies and PAT.

\textsuperscript{22} Refer to chapter 3 for a more detailed discussion about this topic and the research methodology underlying this thesis.

\textsuperscript{23} For more details, refer to chapter 3
help existing and potential investors, lenders and other creditors estimate the value of the reporting entity (OB7 of the IASB (2010)). However, value relevance studies assume that financial statements should reasonably reflect the value of a company and, therefore, their respective claims are difficult to match with current conceptual accounting frameworks. These different views are deeply rooted and reflected in the debates between normative and positive accounting researchers (e.g. Lev, 2008; Skinner, 2008a; Skinner, 2008b; Stark, 2008; Schipper, 2007; Lev, 2001).

The next section elaborates in more detail what useful information means with regard to financial reporting.

2.2.1.2 Qualitative criteria for financial reporting

Chapter 1 of IASB (2010) deals with the objective of general purpose financial reporting as described in the previous section. Chapter 3 of IASB (2010) concerns the qualitative characteristics of useful financial information\textsuperscript{24}.

Financial information is regarded as useful under IASB (2010) if it is relevant and it faithfully represents\textsuperscript{25} what it purports to represent (QC4 of IASB (2010)). These are the two fundamental qualitative characteristics of useful information (QC5 of IASB (2010)).

\textsuperscript{24} Chapter 2 of IASB (2010) covers the reporting entity. This chapter has not yet been finalised by the IASB (i.e. this chapter is intentionally left blank). The reporting entity concept is also not part of this thesis. Hence, it is not discussed here further.

\textsuperscript{25} In the past, accounting standards setters such as the IASB have often referred to reliability instead of a faithful representation. Faithful representation was introduced by the revised chapters of the IASB (2010) such as chapter 3 as released in September 2010. These revised chapters are referred to as IASB (2010). The concept of reliability refers to information that is complete, neutral and free from error. Even though it is no longer used in chapter 3 of IASB (2010) relating to the qualitative characteristics of useful financial information, it is still used in other chapters of IASB (2010) such as chapter 4 (these ‘older’ chapters refer to IASB (1989)). For example, it is still one of the two criteria in chapter 4 for the recognition of an item (4.38 of chapter 4 of IASB (1989)). Moreover, reliability is still referred to in chapter 4 as one of the two main qualitative criteria in addition to relevance (4.65 of chapter 4 of IASB (1989)). From a theoretical point of view, two different terms for one of the two fundamental qualitative characteristics may perhaps raise some issues, but it will not create any issue in respect to the objective of this research. The similarity of both terms is also confirmed by the IASB (IASB (2010)). Moreover, looking closer at the characteristics of these two terms, faithful representation and reliability consist of the same fundamental qualitative sub-characteristics: being complete, neutral and free from errors. Therefore, both terms are used interchangeably in the following sections.
The usefulness of financial information is enhanced if it is comparable, verifiable, timely and understandable (QC4 of IASB (2010)).

Financial information is relevant if it is capable of making a difference in the decisions of users (QC6 of IASB (2010)). This is the case if that financial information has predictive or confirmatory value or both (QC7 of IASB (2010)). Financial information has predictive value if it can be used as an input to processes employed by users to predict future outcomes. Financial information does not need to be a prediction or forecast to have predictive value. Financial information with predictive value is employed by users in making their own predictions (QC8 of IASB (2010)). Financial information has confirmatory value if it provides feedback about previous evaluations, i.e. it confirms or changes it (QC9 of IASB (2010)). The predictive and confirmatory values of financial information are interrelated. Information that has predictive value often also has confirmatory value (QC10 of IASB (2010)).

A faithful representation would perfectly depict its economic phenomena in words and numbers if it were complete, neutral and free from error. The IASB admits that perfection is seldom, if ever, achievable, but it sets the objective to maximise those qualities to the extent possible (QC12 of IASB (2010)). A complete depiction includes all information necessary for a user to understand the phenomenon being
depicted, including all necessary descriptions and explanations (QC13 of IASB (2010)). A neutral depiction is without bias in the selection or presentation of financial information. A neutral depiction is not weighted, emphasised, de-emphasised or otherwise manipulated to increase the probability that financial information will be received favourably or unfavourably by users (QC14 of IASB (2010)).

It is worth noting that the IASB staff have not considered the inclusion of neutrality as an issue; it was a “non-issue” for them (IASB, 2005: p. 9). However, neutrality in its absolute form as stated by IASB (2010) does not exist (Baker, 2006; Tinker, 1991; Solomons, 1991a; Solomons, 1991b). Solomons and Tinker had a lively debate on whether neutrality in accounting is possible. Solomons (1991a; 1991b) states that the avoidance of bias may not always be achievable, or it may even be true that perfect neutrality of information can never be achieved as accountants are human beings, but they should strive towards it. Tinker (1985; 1991) does not believe that accountants can ever achieve an unbiased presentation of financial information and hence start from a different philosophical stance. Solomons and Tinker see neutrality through two different epistemological lenses: Solomons sees accountants as neutral providers of information, independent of the respective financial information, whereas Tinker believes that accountants are part of the economic reality they should inform about. They have constructed such economic reality and therefore they cannot be unbiased, a notion which is also supported by, for example, Baker (2006), Mouck (2004) and Hines (1998). However, there is otherwise very little discussion about the criterion neutrality as used by the IASB, which may have caused the IASB to believe that it is a non-issue. As the discussion about neutrality as stated above is deeply rooted in philosophical stances, it may also be the reason why neutrality is rather taken for granted by the IASB (2010) and from the definition of the IASB in most other analyses (e.g. Quadackers et al., 2014).

Free from error means there are no errors or omissions in the description of the phenomenon and that the process used to produce the reported information was

26 Otherwise there have been many discussions about the epistemological and ontological stance of accounting in general (e.g. Tollington et al., 2012; Mattessich, 2009; Lee, 2009; McKernan, 2007; Lee, 2006; Macintosh, 2006; Williams, 2006; Mouck, 2004; Mattessich, 2003; Macintosh et al., 2000; Searle, 1995).
selected and applied with no errors in the process. In this context, free from error does not mean perfectly accurate in all respects (QC15 of IASB (2010)).

The IASB highlights that faithful representation by itself does not necessarily result in useful information, i.e. information can be faithfully represented, but it is not useful. The IASB provides an example where the level of uncertainty in an estimate is sufficiently large so that this estimate might not be particularly useful (QC16 of IASB (2010)).

It is important to understand how the IASB believes these fundamental characteristics can be applied. It suggests that the most efficient (i.e. economical and effective) process for applying fundamental qualitative characteristics would usually be as follows. First, identify an economic phenomenon that has the potential to be useful to users of the reporting entity’s financial information. Second, identify the type of information about that phenomenon that would be most relevant if it were available and could be faithfully represented. Third, determine whether that information is available and can be faithfully represented. If so, the process of satisfying the fundamental qualitative characteristics ends at that point. If not, the process is repeated with the next most relevant type of information (QC18 of IASB (2010)). This proposed process will become important at a later stage when discussing the new IDF model.

Financial information must meet the fundamental qualitative characteristics in order to be regarded as useful. The qualitative characteristics of comparability, verifiability, timeliness and understandability enhance the usefulness of financial information (QC19 of IASB (2010)).

The qualitative characteristic of comparability enables users to identify and understand similarities in and differences among items. Comparability does not relate to a single item different to the other qualitative characteristics, as it requires at least two items (QC21 of IASB (2010)). Consistency is different to comparability and refers to the use of the same methods for the same items, either from period to period within a reporting entity or in a single period across entities. Comparability is the goal; consistency helps achieve that goal (QC22 of IASB 2010)). Comparability is not uniformity (QC23 of IASB (2010)).
Verifiability refers to the fact that different knowledgeable and independent observers could reach consensus that a particular depiction is a faithful representation. Quantified information need not be a single point estimate rather than a range of possible amounts and related probabilities to verifiable (QC26 of IASB (2010)).

It is important to note that verification can be direct, i.e. verifying an amount or other representation through direct observation or indirect, i.e. checking the inputs to a model, formula or other technique and recalculating the outputs using the same methodology (QC27 of IASB (2010)). In certain circumstances, it may not be possible to verify some explanations and forward-looking financial information until a future period, if at all. In those circumstances, it would normally be necessary to disclose the underlying assumptions, methods of compiling the information and other factors and circumstances that support the information (QC28 of IASB (2010)).

Timeliness refers to the availability of financial information to decision-makers in time to be capable of influencing their decisions. The older financial information is, the less useful it is in general (QC29 of IASB (2010)).

Financial information becomes understandable if it is classified, characterised and presented clearly and concisely (QC30 of IASB (2010)). The IASB emphasises that some phenomena are inherently complex and that they cannot be made easy to understand. Even though excluding such related information from financial reports might make the information in those reports easier to understand, it would also make them incomplete and therefore potentially misleading (QC31 of IASB (2010)). Moreover, it is a rebuttable presumption in the CFFR for the IASB that even well-Informed and diligent users may need to seek the aid of an adviser to understand information about complex economic phenomena at times (QC32 of IASB (2010)).

In addition to the proposition that current financial statements do not meet their original purpose, as stated in section 2.2.1.1, which implicitly includes the fundamental characteristics of relevance and faithful representation, an additional related proposition is raised in order to validate more particularly the qualitative characteristic of reliability, or, as it is recently re-termed by the IASB, faithful representation. As indicated above and as further elaborated in the next sections,
reliable knowledge information might be a concern for constituencies, which could be a reason why some, besides financial accounting standards bodies, also struggle to be in favour of knowledge valuation and reporting within current financial statements (Nielsen et al., 2006; FASB, 2001).

Based on its own empirical research, the Office of the Australian Accounting Standards Board (AASB) found that the reliability of measurement is a function of the inherent nature of intangibles and the availability of relevant data for each intangible item (AASB, 2008). Taking this view, the “enhancing qualitative characteristics” for financial information as laid down by the IASB’s CFFR become more “fundamental qualitative characteristics” or “fundamental qualitative sub-characteristics” in determining the usefulness of intangibles²⁷.

To understand the actual views of constituencies in respect to reliability in the context of knowledge disclosures and to verify whether those views confirm or disapprove the claims in the literature, it is necessary and important to understand what they particularly mean by reliability in the context of current financial statements. It is not clear from the literature what constituencies’ understanding is regarding reliability, particularly in respect to intangible disclosures. However, it could also provide insights into potential differences between the formal definition from accounting standards boards and the understanding of constituencies who use financial statements. Hence, the following proposition is raised:

**P3: Constituencies have a different understanding about reliability with regard to information within financial statements.**

### 2.2.1.3 Intangible assets reporting under current IFRS

Using the IFRS as the primary reference, the main standards in respect to intangibles are IAS 38 “Intangible Assets” and IFRS 3 “Business Combinations”. The IFRS only uses the term intangible assets. The scope is limited compared with the respective definitions of intangible assets, knowledge and intellectual capital in the literature.

²⁷ Refer to the figure above relating to the fundamental characteristics of useful information.
According to IAS 38.8, an intangible asset exists, where an asset is a resource controlled\textsuperscript{28} by an entity as a result of past events and from which future economic benefits are expected to flow to the entity, if it is an identifiable non-monetary\textsuperscript{29} asset without physical substance. An asset is identifiable if it either (a) is separable, i.e. is capable of being separated or divided from the entity and sold, transferred, etc. regardless of whether the entity intends to do so or (b) arises from contractual or other legal rights, regardless of whether those rights are separable from the entity or from other rights and obligations (IAS 38.12). Therefore, several intangibles such as skilled staff (IAS 38.15), often customer relationships and market shares (IAS 38.16), scientific or technological knowledge, processes and systems, trademarks as well as network effects are not deemed to be intangible assets because of the lack of one of the properties as defined above. Even if the definition of an intangible asset is met, intangible assets can only be recognised if (a) it is probable that the expected future economic benefits that are attributable to the asset will flow to the entity and (b) the cost of the asset can be measured reliably (IAS 38.21; IAS 38.18).

Many internally generated intangibles particularly do not meet those criteria. Because of a variety of problems surrounding the identification and recognition of those assets (IAS 38.51), only assets that additionally fulfil the criterion of the so-called ‘development phase’ are allowed to be recognised (IAS 38.52 (b)). For example, internally generated goodwill is not deemed to be an identifiable resource even though it creates future economic benefits because it is not an identifiable resource controlled by the entity that can be measured reliably (IAS 38.51; IAS 38.49). Internally generated brands, mastheads, publishing titles, customer lists and similar elements are further examples that cannot be recognised as intangible assets as they cannot be distinguished from the cost of developing the business as a whole (IAS 38.64).

In addition to IAS 38, IFRS 3 requires the recognition of goodwill as an asset, which represents the future economic benefits arising from other assets acquired in a

\textsuperscript{28} An entity controls an asset if it has the power to obtain future economic benefits flowing from the underlying resource and to restrict the access of others to those benefits. Legal rights enforceable normally in a court of law allow controlling, but it is not a necessary condition for control, as control can be obtained in another way (IAS 38.13).

\textsuperscript{29} A non-monetary asset is the opposite of a monetary asset: a monetary asset is money held or an asset to be received in fixed or determinable amounts of money (IAS 21.8, IAS 38.8).
business combination\textsuperscript{30} that are not individually identified and separately recognised (IFRS 3.32; IFRS 3, Appendix A). No further details are required to be disclosed (IFRS 3.59; IFRS 3.B64 – IFRS 3.B66, Appendix B). As the acquirer within a business combination must measure all identifiable assets acquired and liabilities assumed at their acquisition-date fair values (IFRS 3.18; IFRS 3.B41 – IFRS 3.B45), goodwill is the difference between the fair value amount of the considerations transferred and the total net of the acquisition date amounts of the identifiable assets acquired and the liabilities assumed measured predominantly at fair value (IFRS 3.32; IFRS 3.20; IFRS 3.24 – IFRS 3.31).

It should be emphasised that the set of identifiable assets under IAS 38 that can be recognised is different from those identifiable under IFRS 3. For example, the recognition criteria in IAS 38.21 are considered to be satisfied for all the intangible assets acquired in a business combination even though no observable market data are available for a specific intangible asset (IAS 38.33; IAS 38.35 – IAS 38.41). In those cases, valuation techniques\textsuperscript{31} should be used to estimate fair value (IAS 38.41).

Moreover, an in-process research and development (R&D) project is either partly or not at all recognised as an internally generated intangible asset, whereas an acquirer in a business combination must recognise it as an intangible asset if it meets the definition of an intangible asset. It does not need to satisfy the additional provisions for internally generated intangible assets, i.e. to fulfil the requirements of the development phase according to IAS 38.52 (b) (IAS 38.34).

Even if a company generates internal intangible assets, which are not allowed to be recognised in this company, and sells them to another company, the buying company could recognise them in most cases. Even more curious, if the selling company acquires the buying company now, it would be allowed to recognise the intangible assets sold before (IFRS 3.B35).

Furthermore, many tangible assets are closely associated or interrelated with knowledge. For example, special machines (tangible assets) are often composed of a

\textsuperscript{30} A business combination is a transaction or other event in which an acquirer obtains control of one or more businesses (IFRS 3 Appendix A).

\textsuperscript{31} These are described in more detail in section 2.3.
large number of patents and the knowledge of how these patents can work together in the best manner. Most of such machines only have a value if they can be properly run and used by the buyer, i.e. that the buyer can use the software that runs and controls the machine and he/she can properly operate the machine in accordance with its intended use and objective. It is obvious that a clear differentiation between intangible and non-tangible assets is difficult. Moreover, the debate about the identification of intangible assets seems to be flawed, as it is difficult not only to clearly identify intangible items, but also to identify tangible assets. Of course, a machine is a physical item and therefore visible. But is the observed physical substance composed of the many single physical elements of an item really what we think about when we refer to a specific item such as a machine? Or do we rather think about the use and possible outcomes of such a machine as a result of a complex interaction between various different intangible and tangible items? As discussed in section 2.1.2, such issues are fundamentally embedded in the whole discussion about intellectual capital and knowledge in the literature (Chaminade et al., 2003; Roberts, 2000; Sullivan, 2000). However, the accounting standards setters and normative accounting related literature have not had such discussions yet. Hence, the related definitions as described above are the outcome of their deliberation processes. Financial statements users are left alone without any guidance in the application of the current definition; even more, there is no guidance available in the proper application of the overarching principles from the CFFR as discussed above32.

Recognition is a particular issue of regulatory accounting frameworks such as the IFRS. Measurement and disclosure, as complementary parts of recognition within regulatory accounting frameworks, are more general issues that are also relevant for voluntary disclosures, as discussed in the next sections.

Measurement in accounting regulation refers to the process of determining the monetary amounts at which the elements of financial statements are to be recognised.

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32 As explained above, it is an objective of this research to review the fundamental principles of the accounting standards’ approach and related normative accounting theory towards intangible assets from a financial statements users’ point of view. This should allow discovering the reasons for the disconnection between accounting standards and financial statement users as claimed in the literature and as illustrated by the related examples. The research methodology is explained in more detail in chapter 3.
initially and subsequently carried onto the balance sheet and income statement (4.54 of IASB (2010))\textsuperscript{33}.

Generally, the price an entity pays to acquire separately an intangible asset is the basis for initial measurement. This must be measured initially at cost, whereas cost is defined as the amount of cash or cash equivalent paid or the fair value of the other consideration given to acquire an asset at the time of its acquisition or construction (IAS 38.8, IAS 16.6, IAS 38.34-32). If an intangible asset is acquired in a business combination, the cost of that intangible asset is its fair value at the acquisition date (IAS 38.33). Fair value is the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm’s length transaction (IAS 38.8, IFRS 3.A, IAS 16.6). The fair value of an intangible asset reflects expectations about the probability that the expected future economic benefits embodied in the asset will flow to the entity (IAS 38.33 second sentence). According to IAS 38.33, the probability criterion in IAS 38.21 (a) is always considered to be satisfied for intangible assets acquired in a business combination. In determining fair value in a business combination, entities have to refer to quoted market prices in active markets if available as the primary source to estimate in a most reliable manner the fair value of an intangible asset (IAS 38.39). If no active market with quoted market prices for a particular intangible asset is available, which is rather common (IAS 38.78), entities are required to use other techniques to estimate fair values indirectly such as (a) discounting estimated future net cash flows from an asset or (b) estimating the costs the entity avoids by owning the intangible asset and not needing (i) to license it from another party in an arm’s length transaction (relief from royalty) or (ii) to recreate or replace it (cost approach) (IAS 38.41). IFRS 13 specifies that an entity must use valuation techniques that are appropriate and for which sufficient data are available to measure fair value, maximising the use of relevant observable inputs and minimising the use of unobservable inputs (IFRS 13.61; IFRS 13.67).

After initial recognition and measurement, an intangible asset should be carried at amortised cost, i.e. initial cost less any accumulated amortisation and any

\textsuperscript{33} For a general discussion about measurement, refer to section 2.3. Measurement for regulatory purposes is a specific type of general measurement, which is referred to as valuation in section 2.3.
accumulated impairment loss (IAS 38.74). Only if an active market is available should the intangible asset be carried at a revalued amount; no valuation technique should be used to determine fair value (IAS 38.75, 38.81).

Amortisation refers to the allocation of the depreciable amount of an intangible asset on a systematic basis over its useful life, if the intangible asset has a finite useful life. Otherwise, no amortisation is required (IAS 38.97). Impairment loss is measured in accordance with IAS 36 (IAS 38.111); it is the amount by which the carrying amount of an asset exceeds its recoverable amount, whereas the recoverable amount of an intangible asset is the higher of its fair value less costs to sell and its value in use\textsuperscript{34} (IAS 36.6). There is no further guidance on more particular measurement methods for intangible asset valuation under IFRS.

Section 2.3 – the measurement and valuation of intangibles – discusses in more detail the various issues relating to the general measurement and fair valuation of intangible assets. Particularly in section 2.3.4, a proposition is raised that financial statements users find it useful to see value relevant information such as valuations and related information on intangible assets in financial statements despite the current issues – as further discussed in the following sections – and the concerns raised and limitations set by accounting standards setters.

According to IAS 38.118 ff., companies also have to disclosure a series of different explanatory information for each class of intangible assets under a financial accounting framework such as the IFRS (IAS 38.118). Classes of intangible assets are defined as groups of assets that are similar in use and nature in an entity’s operation (IAS 38.119). That kind of information relates primarily to the determination of the amortised costs, or revalued carrying amount, if applicable and whether and why an intangible asset has a useful life or not. However, an entity is even more encouraged, but not obliged, to disclose information about fully amortised intangible assets that are still in use and provide a brief description of significant intangible assets controlled by the entity but not recognised as assets because they

\textsuperscript{34} Value in use is the present value of the future cash flows expected to be derived from the asset or cash-generating unit (IAS 36.6). A cash-generating unit is the smallest identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets (IAS 36.6). Elements to be considered and the process is described in IAS 36.30-36.32. BCZ10 (b)
did not meet the recognition criteria in this standard (IAS 38.128). The IASB believes that information that does not meet the recognition criteria is still useful, even though the border seems to be arbitrary between intangible assets that are not recognised as they have not satisfied the criteria for recognition and intangible assets that are at least as useful to disclose.

It should have become obvious that almost no two entities are comparable in respect to their intangible assets recognition procedures. The concept of intangible assets under IFRS seems to be inconsistent. The definitions also tend to be flawed as, for example, control can be obtained through non-compete agreements (Gayton, 2006). The IFRS does not even allow recognising many other intangibles that tend to be rather value relevant for a company. Goodwill, which can only be recognised in business combinations, is a residual element that shall only be explained in a general qualitative manner and quantitative measures are not permitted to be disclosed. It even includes psychological effects at the acquisition date to which many others refer to when explaining differences between an entity’s book and fair values. Overall, considerable ambiguity, inconsistency and subjectivity are already inherent in current IFRS requirements (e.g. Wines et al., 2007) in addition to the limited scope of eligible intangibles for recognition in financial statements.

In summary, intangibles can only be recognised to a very limited extent under IFRS. Moreover, recognition under IFRS is not even consistent between different standards. It is also unclear whether and to what extent such information is useful for financial statement users.

2.2.1.4 Issues of intangible assets disclosures under current IFRS

In previous sections, the topic of intangible assets under IFRS was discussed. In particular, the purpose of financial statements, their underlying qualitative criteria and the current financial reporting of intangible assets under IFRS were elaborated. Several problems were identified and related issues addressed from this discussion, which become subject to further empirical research.
However, there are further specific issues to consider. These emerge from the previous discussions and they mainly relate to several topics such as:

- whether constituencies are really expecting intangibles related information disclosed within external financial reporting such as the IFRS to be compliant with all current qualitative criteria of the accounting framework of the IFRS as well as specific IFRS intangible assets accounting rules;
- whether constituencies already receive a certain type of information, particularly relating to intangible assets, outside current financial reporting to meet their information needs.

The latter could indicate that decision-useful information for a broader class of financial statements users is missing within current external financial reporting, which is needed to fulfil the purpose of external financial reporting. This aspect is strongly related to the first bullet point, as constituencies may rather prefer to receive such missing information under a formal external financial reporting framework. Constituencies might not share the view of accounting standards setters in relation to the importance and relevance of the various qualitative criteria and specific accounting provisions for intangible assets. Using their respective criteria and requirements, intangible assets could be required to be disclosed under a formal external financial reporting framework such as the IFRS in a significantly larger scope.

Several authors argue that knowledge information is somehow considered in the decision process of constituencies, albeit that information is not derived from the financial statements (Ousama et al., 2011; Garcia-Meca et al., 2007; Flöstrand, 2006; Holland, 2006; Guimón, 2005; Solomon et al., 2005; Breton and Taffler, 2001; Roger and Grant, 1997; Previts et al., 1994). Companies recognise knowledge information as important for other constituencies, particularly investors, to make decisions (Ousama et al., 2011). Therefore, it will be validated by the following proposition whether this assumption from the literature holds as well as which and to what extent such knowledge related information is used for decision-making:

**P4: Constituencies already recognise, outside the financial statements and in different manners, the knowledge value within a company.**
Furthermore, it is questioned in the literature whether the current financial accounting framework is still adequate for companies whose (fair market) values are increasingly driven by non-tangible assets and capabilities that have different characteristics than tangible assets (Skinner, 2008a; Stark, 2008). However, no empirical evidence could be found in the literature that the current financial accounting framework should be abolished; there are only claims for changes in financial accounting standards by many of those authors who support the view that intangibles are not adequately reflected by current financial accounting standards. However, there is no proposal in the literature about whether new intangible accounting rules should be embedded and consistent with the current accounting framework or whether financial accounting frameworks have to be revised if new accounting standards are introduced for intangibles. Moreover, and as Burgman and Roos (2007) state, the criteria for information content, i.e. the “how” for intangible assets reporting and disclosure, are also largely ignored today in related research. The following proposition is thus formulated to validate whether those claims, particularly relating to intangibles/ knowledge, can be confirmed in respect to the principle financial accounting requirements as set out in different accounting frameworks:

**P5: Constituencies do not require that information in financial statements including information about knowledge is in accordance with the general financial accounting framework.**

The next section discusses alternative disclosure approaches for intangibles as proposed in the literature. Most of them are proposed as approaches outside current financial statements. However, some authors also request that more intangibles should be allowed to be recognised under the current financial reporting framework in order to make decisions on financial statements useful again.
2.2.2 Disclosure of intangible assets outside current financial reporting frameworks

Disclosure frameworks for intangibles other than regulatory financial accounting frameworks such as the IFRS may comprise a variety of different forms and approaches, such as multi-column reporting (Lewis et al., 2004) or integrated reporting (International Integrated Reporting Council, 2017; Nazari et al., 2015), apart from any other self-constructed form by the party disclosing intangibles-related information. Aside from the difference in their legitimacy, other than regulatory financial accounting frameworks are generally not subject to regular/mandatory audit procedures (International Federation of Accountants, 2012).

Multi-column reporting refers to presenting two or more values for assets and liability and two or more profit figures based on different conceptual frameworks for different user groups in published financial statements (Lewis et al., 2004). This approach is closest to the current regulatory accounting frameworks and is rather an extension of them. While this looks appealing, as the needs of a broader range of different user groups can be met, it may also confuse and mislead the users. A user group would read not only the values addressed to them, but also the values of the other user groups, and they may not clearly understand the different purposes of these values. However, this may be solved by a clear and distinctive presentation throughout the published financial statements.

Integrated reporting is a principle-based framework to explain to financial capital providers how an organization creates value over time, which includes, but is not limited to, intangibles (International Integrated Reporting Council, 2017). It does not prescribe details about how in particular intangibles-related information should be

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35 This assumes that a single value is not misleading. Considering also that all values in the financial statements are types of best estimate and that, statistically speaking, each single value presented in the financial statements has a likelihood of zero to be the ‘real’ value taking the common assumption of continuously distributed values, or more precisely value changes, single values may also present to the user an accuracy and reliability that effectively does not exist.

36 It is worth noting that although the current IFRS does not present two values at the same time for the same assets on the face of the balance sheet, it requires in many cases the disclosure of the fair value of an asset carried at amortized costs (e.g. IAS 39/IFRS 7) and hence a kind of hybrid tendency towards multi-column reporting.
integrated, but it provides a framework that allows the presentation of relationships to other elements such as physical and financial assets that have contributed to the value creation process.

There are also various ways to disclose and disseminate intangibles-related information, such as through the internet,\(^{37}\) compared to traditional, paper-based ways (Parker, 2007; Gallhofer and Haslam, 2006). Internet-based financial disclosure is generally categorized by the presentation format and disclosure content (FASB, 2000). It increases the delivery speed and reduces the dissemination costs of information (FASB, 2000), although it may also lead to information overload if not managed properly (Paredes, 2013; Securities and Exchange Commission, 2013). The latter means that only such information should be provided that users find useful for their decision-making process, which leads to the question of what exact information the various user groups actually need (Pennington et al., 2016; Securities and Exchange Commission, 2013). Internet-based financial disclosure may help in particular with the use of hyperlinks due to its navigational flexibility (Kelton et al., 2012), providing through a distinctive structure and relevant prompts more user control over information search and acquisition, and thus reducing the effort for users and enhancing decision-making efficiency (Arnold et al., 2012; Gassen, 2001; Ramarapu et al., 1997). The latter would also allow the disclosure of different information for different objectives without confusing the users, as they would be guided to their relevant information. Consequently, the argument of confusing and misleading information against multi-column reporting would become invalid.

Through the way of internet-based disclosing, multi-column reporting may again become an interesting and useful concept in the future.

There are also a large number of different disclosure approaches proposed in the literature specifically designed for intangibles. They are developed to overcome the current weaknesses and drawbacks of published financial statements as recognized by many authors in the literature. They exist in their variety because of the lack of a common conceptual framework. Those approaches consist of many different valuation, measurement, management and reporting approaches for intangibles, which most are commonly known as intangible or intellectual capital reporting.

\(^{37}\) This may include disclosure on a web site, disseminating through online portals, etc.
approaches. Most authors suggest disclosing them simply through a separate statement independent of current financial statements.

Sveiby (2009) identifies 34 methods for measuring intangibles, Kaufmann et al. (2004) find 36 relevant publications on this topic (although not all publications suggest a new method) and Andriessen (2004a, 2004b) observes 25 different methods. Dumay et al. (2013) even indicate that more than 50 intangibles related approaches are available. The methods identified by these authors are overlapping, but also different for some methods. However, there are many more methods (e.g. Allee’s (2008) knowledge valuation approach), particularly if all modifications are also counted.

Generally, these approaches can be categorised in different ways such as categorisation based on the different users who will apply them, the information used to create such methods or the purpose of them (Kaufmann et al., 2004). Such approaches are often divided into four categories as proposed by Luthy (1998) and Williams (2001), and also used by Sveiby (2004). The four categories they propose are:

- **Market Capitalisation (MC) methods**: these calculate the difference between a company’s MC and its stockholders’ (book) equity as the value of its intangibles. Sometimes the difference is further broken down into single elements. Examples are the MC method by Rodov et al. (2002), Hoogendoorn’s (1999) financial overview, the FiMIAM (Rodov et al., 2002), Mills’ (2002) intangibles and intellectual capital valuation model and Tobin’s Q (Sveiby, 2009; Tobin, 1969).

  All MC approaches tend to be pragmatic. They are not empirically validated and only identify and explain possible and general elements and drivers of the difference; specific elements are not identified. Whether and to what extent specific intangible items contribute to the overall company’s value is unclear. Consequently, it remains unclear whether and to what extent possible differences are associated with intangibles.

- **Return on Assets (ROA) methods**: ROA methods are based on and can be traced back to accounting figures. They aim to estimate an average return on intangibles as a proxy for the value of a company’s intangibles. Often, the average pre-tax
earnings of a company for a period of time divided by the average tangible assets of the company is used as a starting point. The result is a company’s ROA that is usually then compared with a benchmark, often an industry average. Based on this differential, a value for intangibles is derived. Examples of such models are the value added intellectual coefficient (VAIC) by Public (2000), ROA for intellectual capital valuation by Rodov et al. (2002), economic value added for intellectual capital valuation (Johanson, 1999) and market value added (Johanson, 1999).

Even though these approaches provide a monetary value for non-physical items, they do not provide insights into single non-physical items and their particular values. Owing to their general approach, and as single intangible items are not clearly identified, it cannot be even ensured that only relevant intangibles are considered.

- Scorecard (SC) methods: The various components of intangibles are identified and indicators and indices generated and reported in SCs or as graphs. SC methods are similar to direct intellectual capital (DIC) methods (see below), except that no estimate is made for the monetary value of the intangible items and no link is established to a monetary value. SC models tend to be more comprehensive, holistic and complete compared with DIC models, as they also consider to a certain extent the interaction among different intangibles. A composite index may be produced. Most methods proposed for intangibles measurement and reporting relate to SC methods. Examples are the balanced SC (Kaplan et al., 2000; Kaplan et al., 1996; Kaplan et al., 1993; Kaplan et al., 1992), intangible asset monitor (Sveiby, 1998; Sveiby, 1997), Skandia AFS Business Navigator (Edvinsson et al., 1997), intellectual capital approach (Sullivan, 2000), LIAHONA-H.O.M.E.S. (Bornemann et al., 1999), the Invisible Balance Sheet (Konrad Group, 1989), intellectual capital index (Roos et al., 1997) and intellectual capital dynamic value approach (Bounfour, 2003).

SC based methods have the advantage that they require the identification of all relevant intangible items and sometimes even how they are related to each other. However, SC approaches only provide indicators and indices as a kind of measure, and they generally do not provide monetary values for individual
intangibles. These measures are usually tailor-made and specific for a company and therefore they cannot be generally used for comparable analysis across different companies. Moreover, owing to their subjectivity, it is even difficult to compare the measures of one company over time in a consistent manner.

- DIC methods: The various intangible items of a company are identified as far as possible and monetary values are allocated to them, either directly and individually or as an aggregated coefficient. Similar to SC methods, DIC methods initially identify various relevant intangibles. In contrast to SC methods, they estimate a monetary value for each individual intangible item based on widely used general valuation methodologies, which can generally be classified into three broad categories (Keuleneer et al., 2003; Damodaran, 2002; Copeland et al., 2000): relative valuation approaches, discounted cash flow (DCF) valuation approaches and contingent claim valuation approaches38. In contrast to many SC models, interactions among different single intangible items are generally not explicitly considered. DIC methods are closest to current accounting principles such as the IFRS. Some approaches are already being applied for specific intangibles to recognise those elements in published financial statements. Examples of methods based on DIC methods are intangibles valuation (Reilly, 2001; Reilly et al., 1998), intellectual capital approach to valuation (Sullivan, 2000), “Statement of Investment in the Future” (Rennie, 1999) and human resource costing & accounting (Flamholtz, 1985). Current financial accounting standards such as the IFRS would also belong to this group even though they do not provide any indication about a valuation method.

DIC methods measure individual intangibles, although it is often unclear and particularly not determined how they have been identified and distinguished from each other in order to measure the right things and particularly not measuring something implicitly twice. This is a particular problem of overlapping identified intangible items and intangible items that are interrelated. Sometimes this problem is circumvented by allowing only those intangibles to be recognised that can be reliably identified. An example of the latter would be the current financial accounting standards for the recognition of intangible asset. Moreover, a variety

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38 These are discussed in more detail in the following sections.
of different measurement approaches for DIC methods are suggested, claiming that they are superior valuation methodologies compared with others, which leads again to results that are not comparable across different companies and DIC methods due to their different measurement approaches.

It is widely accepted and commonly known that for investment valuations relating to DIC methods, no perfect performance and valuation measure exists; the most appropriate performance and valuation measures need to be found based on a predefined and specific objective (Damodaran, 2002; Copeland, et al., 2000). However, it should be also evident that no one particular measure is likely to sufficiently describe the performance and value of an investment, which is particularly valid for more complex investments such as intangibles. A measure selected by a company for intangibles will hardly convince decision-makers, as the reliability and comparability of this measure would be in question. Regarding reliability, the method is not widely validated and accepted in this specific context and it could also be questioned whether it is appropriate to meet its objective. The reliability of the underlying information and data could be another factor that affects the reliability of the whole approach selected. Obviously, comparability is difficult or impossible for intangibles that are defined differently or that have different meanings, but even with identical meanings they cannot be compared if the measurement method is different. Therefore, Copeland et al. (2000) suggest a comprehensive value metrics framework based on several single DIC and even SC methods to overcome the disadvantages of single performance measures by linking various economic measures to describe different aspects of performance. The difference between DIC and SC models becomes blurred under such frameworks.

Some authors only distinguish between approaches that result in monetary and non-monetary values for intangibles (Tan et al., 2007). Others distinguish between deductive summarised approaches and inductive analytical approaches (e.g. North, 1998). The latter distinction seems to be preferred in the German language literature. Deductive summarised approaches focus on the difference between the market and book values of a company, whereas inductive analytical approaches explain and

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39 The issues around measurement and valuation are discussed in more detail in the following sections.
measure individual elements/components of the knowledge base of a firm with the objective of developing the knowledge base (North, 1998). If both categorisation approaches are merged, the categorisation in Figure 2.2 may appear.

![Figure 2.2: Categorisation of knowledge models](image)

However, it should be recognised that few methods have properties of only one category. Most methods have a few aspects that belong more to another category than to that in which they are categorised. Some methods can also be used as components of other methods and therefore relate to more than one category. Most of the approaches suggested in the literature can be classified as either SC or DIC methods.

Almost all the intangibles related disclosure models suggested in the literature are considered to be highly relevant by their authors. However, there has been no widespread acceptance of these models, partly because they tend to be too qualitative and subjective in nature, not widely empirically validated, lack validity for different reasons, too broad or general, mostly developed by practitioners rather than by academics (not theoretically well developed) and have objectives that remain ambiguous (Dumay, 2009; Choong, 2008; Andriessen, 2004b; Kaufmann et al., 2004). Even more, no specific model is regarded as suitable for audited financial statements (Samudhram et al., 2008; FASB, 2001). Most of the scarce empirical
research relates to the software and consulting industry (Kaufmann et al., 2004). These authors claim that such models would significantly enhance current intangibles valuation and reporting. Therefore, the following proposition is used to validate whether such claims are reasonable from constituencies’ points of view:

**P6: Current knowledge valuation and reporting models proposed in the literature as highly relevant are not that relevant from the points of view of interviewees.**

The following table (table 2.1) summarises the models and elements suggested in the literature, which are validated with the different constituencies.
<table>
<thead>
<tr>
<th>No.</th>
<th>Model Description</th>
<th>DIC</th>
<th>MC</th>
<th>ROA</th>
<th>SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Description and Figures about Company’s Reputation</td>
<td>Y-as a part</td>
<td>Y-indirectly as a part</td>
<td>N</td>
<td>Y-as a part</td>
</tr>
<tr>
<td>2</td>
<td>Description and Figures about Contracts (legal enforceable contractual arrangements)</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>Y-as a part</td>
</tr>
<tr>
<td>3</td>
<td>Description and Figures about Intellectual property (copyrights, trademarks, patents, brands, etc.)</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>Y-as a part</td>
</tr>
<tr>
<td>4</td>
<td>Description and Figures about Customers</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>Y-as a part</td>
</tr>
<tr>
<td>5</td>
<td>Description and Figures about Locations (property rights, real estates, etc.)</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>Y-as a part</td>
</tr>
<tr>
<td>6</td>
<td>Description and Figures about Markets (trade marks, brands, labels, company logos, life-cycle of products, marketing strategies)</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>Y-as a part</td>
</tr>
<tr>
<td>7</td>
<td>Description and Figures about (Infra-) Structure assets (such as corporate culture, management style &amp; philosophy, management processes, information &amp; network systems, R&amp;D, structural/organizational capital and other remaining intellectual assets, going-concern value elements – different business elements are physically and functionally assembled which create value, existence of excess economic value, expectation of future events that are not directly related to the current operation of the business)</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>Y-as a part</td>
</tr>
<tr>
<td>8</td>
<td>Description and Figures about (Production) Processes</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>Y-as a part</td>
</tr>
<tr>
<td>9</td>
<td>Description and Figures about Data processing &amp; technology (electronic database, computer software, hard and software used, etc.)</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>Y-as a part</td>
</tr>
<tr>
<td>10</td>
<td>Description and Figures about Human capital (company’s assembled workforce, i.e. employee contracts, staff and management know how, staff and management experience, etc.)</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>Y-as a part</td>
</tr>
<tr>
<td>11</td>
<td>Company’s value chain (and its intangible assets (= intellectual capital) linked to its strategy) and a description of how the company manage it (supported by, e.g., key performance indicators)</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>12</td>
<td>Company’s knowledge linked to its corporate activities and systems for the measurement and valuation of intangibles.</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>13</td>
<td>How a company plans to achieve its strategic objectives by its intellectual capital (IC) (i.e. objectives &amp; strategies linked to different intellectual assets/ components of IC and linked to company’s prospective financial budget)</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>14</td>
<td>How a company manage its intellectual capital, e.g. by the “Balance-Score-Card” (BSC)</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>15</td>
<td>Different ratios and/or performance indicators linked to company’s strategies and objectives</td>
<td>N</td>
<td>N</td>
<td>Y-partly Y</td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>Model Description</td>
<td>DIC</td>
<td>MC</td>
<td>ROA</td>
<td>SC</td>
</tr>
<tr>
<td>-----</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>16</td>
<td>Value of intangible assets by the “Value Added Intellectual Coefficient” (VAIC); it indicates corporate value creation efficiency. The higher the VAIC coefficient, the better management has utilized the company’s potential. VAIC should monitor and measure the value creation efficiency in the company according to accounting based figures.</td>
<td>Y-partly</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>17</td>
<td>Monetary value of individual employees and/or groups of employees</td>
<td>Y-as a part</td>
<td>Y-indirectly as a part</td>
<td>N</td>
<td>Y-as a part</td>
</tr>
<tr>
<td>18</td>
<td>Value of human intangible assets by the treatment of employees as an “asset, which a company has to lease” (akin to equipment financial lease) and therefore the leasing commitment would be capitalized on the balance sheet similar to “debt finance assets”.</td>
<td>Y-as a part</td>
<td>Y-indirectly as a part</td>
<td>N</td>
<td>Y-as a part</td>
</tr>
<tr>
<td>19</td>
<td>Value of intangible assets by different (other) ratios such as: <strong>“Market-to-Book Ratio”</strong> (market prices divided by book value of company) <strong>“Residual Value Approach”</strong> (derived from the market value of the company by deducting any identifiable tangible and intangible asset from market price of company) <strong>“ROA”</strong> (= company’s average annual excess Earnings over three to five years divided by average cost of capital) <strong>“Market Capitalization Method (MCM)”</strong> (It assumes that excess of a company’s market capitalization over its stockholders’ equity is its intellectual capital)</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>20</td>
<td>Value of intangible assets by establishing of a “Statement of Investments in the Future”, which buffers the expenses in intangible assets for a period of 3 to 5 years, until they prove to be either expenses (and consequently are charged to the income statement) or investment (and therefore activated as assets on the balance sheet).</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>21</td>
<td>Value of intangible assets by the “Direct Intellectual Capital” (DIC) method: This focuses on measuring the value of intellectual capital (IC) by first identifying its various components and then directly evaluating them. Components of IC [such as market assets (such as customer loyalty), Intellectual Property (such as patents), technology assets (such as know-how), human assets (such as education and training), and structural assets (such as information systems)] are all measured and then the total value of company’s IC can be derived.</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>22</td>
<td>Value of intangible assets by the “Financial method of intangible assets measurement” (FiMIAM) method.</td>
<td>Y</td>
<td>Y-indirectly</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

Table 2.1: Overview of knowledge models and elements proposed in literature

where “Y” = yes, the model pertains to this category; “N” = No, this model does not pertain to this category; “as a part” = this model only contributes a component to a different overall model; “indirectly as a part” = this model is used to identify and/or value a component derived from a more comprehensive model.
In the next section, the meaning of the measurement and valuation of intangibles is discussed in more detail. As valuation is an activity or process to obtain a value, the concept of value is also discussed. These discussions are important to understand and to assess the particular problems of the measurement and valuation of intangibles within a company. They will also be related to concerns raised by accounting standards setters. It will also be emphasised that measurement is based on an object that needs to be defined properly at the beginning, i.e. measurement is subject to an acceptable and appropriate definition and meaning of intangibles within a company.

2.3 Measurement and valuation of intangibles

Value theory in economics has traditionally provided the logic for exchange relations and accounting the system for measuring and reporting reciprocity in exchange where money is the measuring unit (Alexander et al., 2011; Tinker et al., 1982). Measurement could be regarded as quantification - i.e. the assignment of numbers to represent the magnitude of attributes of an object or system we want to describe (Hand, 2004). As regards value theory, it means numerical numbers representing the magnitude of money.

Measures are output values of measurement. Particular measures include, for example, the numerical expressions of value such as money as an outcome of a valuation process. In general terms, measures describe objects in that they reproduce, in a numerical domain, the empirical relations that exist among them, i.e. measures represent, deterministically or stochastically, objects as numbers and their relations among each other (Finkelstein, 2009; Rossi, 2009).

This section discusses the meaning of value and the general measurement of intangibles and examines how monetary values can be assigned to intangibles. This value assignment process is commonly referred to as valuation in business to estimate fair value. Several important issues are highlighted to explain in detail why the valuation of intangibles cannot be a precise science and remains difficult in practice.
As we discussed in the preceding sections, the literature claims that constituencies might want to see more intangibles value related information, whereas accounting standards rather take a restrictive and prudent view whereby information not meeting the qualitative criteria under the respective accounting standards frameworks are deemed as not useful for constituencies.

It seems to be important to better understand the views of constituencies and what they are expecting. This is particularly important as intangibles valuation will remain a significant challenge, while at the same time constituencies might need to understand the value, or underlying drivers, of intangibles. Therefore, section 2.3.4 points out, based on the preceding discussions on measuring and valuing intangibles, the need for further empirical research to understand the views from constituencies and what they expect in this particular respect. Such an understanding could better align their expectations and what is provided in current external financial reporting.

2.3.1 The meaning of value

Value is a concept that has many meanings, each of which may apply in a narrow or unique set of circumstances. Many authors do not define value when they write about value rather taking value as granted or only as a result of a mathematical formula with some variables/parameters (e.g. Glen, 1998; Rappaport, 1998).

Value is related to usefulness (Sullivan, 2000). Nothing can have value without being an object of utility, which is also in line with Rescher’s value theory (Rescher, 1969). If it is useless, the labour contained in it is useless or it cannot even relate to labour and therefore cannot create value. Value is different from cost and price. Value is a measure of the usefulness of something, whereas cost is a measure of the amount of resources required to produce it. Price, by way of further contrast, measures what an item’s owner believes others will pay for it (Sullivan, 2000).

In brief, value can be defined as the degree of the usefulness or desirability of something, especially in comparison with other things. It is not a property inherent in the item at issue (Andriessen, 2004b).
Based on this definition, value is not only an expression for monetary amounts. This is only true in part and in a narrower sense of the term value. The value of an item depends primarily on the needs of the person or organisation using it, i.e. value is relative.

In accounting, there is an array of (monetary - see above) value concepts. For example, Edwards and Bell (1961) refer to three dimensions to define value: (1) initial inputs, present form and ultimate form; (2) value dates, past, current and future; (3) entry vs. exit prices. This results in eighteen possible value alternatives; but even this list of value definitions is not complete as, for example, economic value could be added, which could be seen, in simple terms, as the current evaluation of future flows of net receipts (Alexander et al., 2011).

Value in relation to financial accounting may also be referred to as the concept of capital (4.57 of IASB, 2010; Alexander et al., 2011; Lewis et al., 2004). Capital is the stock of (net) assets (balance sheet) from which a company is able to generate future income (income statement) - i.e. generating future flows of (net) receipts. The value of capital is here dependent on the value (here in the accounting sense of money) of those future (net) receipts. In this respect, the capital value is similar to the economic capital as stated above, which means the value of net assets (on the balance sheet) is dependent on the future flows of net receipts (presented in the income statement of one or more periods). Considering the objective of decision-usefulness under IASB (refer to section 2.2.1.1), assuming a stronger emphasis on reliable information may lead to a stronger focus on the value of (net) assets (balance sheet) as well as a stronger emphasis on more relevant information may lead to a stronger focus on how future income is generated (income statement), the economic capital concept may be the most appropriate concept to apply consistently throughout the IFRS to ensure a well balanced approach to achieve decision usefulness (i.e. a balanced approach between reliability vs. relevance; refer to section 2.2.1.2).

However, as it is shown in the next sections and chapters, the IASB applies different value and measurement concepts such as historical cost (past value as referred to above) and fair value (future value as referred to above), which naturally results in inconsistencies between what the IASB wants to achieve (i.e. meeting the objective of decision-useful information) and what they actually create through the financial
accounting standards including IAS 38/ IFRS 3. The latter is discussed further in sections 2.2.1.3, 2.2.1.4 and 4.3.2.

IFRS refers to “value-in-use” as a similar concept to the person or organization dependency as described above, which reflects the effects of factors that may be specific to the entity and not applicable to entities in general and which is different from a fair value of an asset (e.g. IASB, 2009; FASB, 2001; IAS 36.53A). For example, value measurements are used for decision-making in the business context (Sullivan, 2000). The value of an item is often the basis for deciding whether to invest in it, to continue holding it or to sell it, i.e. value is a measure of the utility the item brings to the firm. This value can also be called economic value. To be able to measure it, it is necessary to have a reference point, a kind of benchmark, to use it as the basis for measurement. This reference point can occur in different ways, i.e. by using an already known and widely recognised scale on which a reference point is already determined (e.g. money) or by using an individually created scale with an individually predetermined, sometimes personal, reference point (e.g. a three-item scale (good, neutral and bad) for which the item neutral should be predefined by the user in the specific context). Lee (1985) describes that kind of valuation as a process of ranking preferences.

In the following section, general measurement theory is introduced, which is required as a basic tool for determining a reference point for different needs and to assess and measure value, i.e. the degree of the usefulness or desirability of something such as intangibles.

### 2.3.2 Principles of measuring value

Measures are output values of measurement. As described in the previous section, they represent objects as numbers and their relations among each other (Finkelstein, 2009; Rossi, 2009). Ellis also requires that the representation should be based on homomorphism or even isomorphism (Ellis, 1966), which means in general terms that the principal mathematical structure is preserved.
The general procedure to obtain meaningful measurement results such as value measures for intangibles is composed of several steps:

1) Identifying the objects under consideration. This is often referred to as empirical observations. Relating to intangibles, it refers to the clear definition of intangibles to clearly determine what the object “intangibles” should consist of. The definition of intangibles and related issues were discussed in previous sections.

2) After having determined what intangibles should be and consist of, at least one attribute/property/characteristic\(^{40}\) should be determined to define what should be measured. This could be the attribute “value” (other attributes could be performance, size, colour, etc., which could be either independent of each other, interrelated to each other or contributing, to different degrees, to an overall attribute).

3) Establishing what comprises the attributes under investigation (e.g. set A manifests a property such as colour, whereas set A consists of the colours black, grey, red, green and white).

4) Assigning scale values to empirical observations (e.g. to the elements of set A above). With regard to intangibles, scale values are assigned to the elements of set A that manifest an attribute of the intangibles under consideration (empirical relational structure reflecting its empirical attributes/properties).

5) Transforming such scale values to produce another scale (construction of a homomorphism into a numerical relational structure). If the assigned scale values (step 4) are not a specific monetary currency, this transformation is necessary to translate the assigned scale values into a monetary scale value if a monetary result is expected. In this respect, valuation is the specific process of measuring the value based on the preceding steps.

\(^{40}\) If there are more than one attribute/property/characteristic, the process needs to be executed for each additional one separately again.
6) Determining the meaningfulness of the last scale (comparisons of assigned scale values)

The identification of intangibles, i.e. step 1, was discussed in preceding sections. Measurement and valuation, i.e. the process of assigning values following step 1, is discussed in the following.

The second step requires determining the attribute that should be subject to measurement. In this thesis, value is the relevant attribute, as defined in section 2.3.1.

The third step refers to the issue of what constitutes and comprises the attribute “value”. The meaning of “value” in this respect is discussed in section 2.3.1.

The fourth step consists of assigning numbers from a scale in \( \mathbb{R} \) (a set of real numbers) to the elements of a set, e.g. a set \( X \), of observed judgments so that for all \( i \) and \( j \) in \( X \) (i.e. \( i, j \in X \)), \( S(i) > S(j) \) is true if \( i \) is preferred to \( j \) (i.e. \( i > j \); the sign “>” stands for “preferred to”)\(^{41} \). The assigned numbers to the object should reflect the results of the empirical comparisons based on an attribute\(^{42} \) (Krantz et al., 1971).

The following function can be used:

\[
S: X \to \mathbb{R}, \quad S(i) := a, \quad \text{for } i \in X \text{ and } a \in \mathbb{R}
\]

\( i.e. i > j \text{ (or } i \leq j \) \( \iff S(i) > S(j) \text{ (or } S(i) \leq S(j) \)

Such mapping from empirical attributes to numbers needs to comply with certain rules, or, as is commonly used in measurement theory, with axioms.

The fifth step is the transformation of the scale values, \( S(i) := a \text{ with } i \in X \text{ and } a \in \mathbb{R} \), to another scale. If a given relational structure satisfies certain axioms, a homomorphism can be constructed into a certain numerical relational

\(^{41}\) Three important notes: (1) \( X \) must only be infinite (i.e. a finite set is comprised), (2) the mapping to \( \mathbb{R} \) is already a limitation as \( \mathbb{R} \) is an Archimedean ordered space. This assumption could be relaxed by taking other resulting spaces instead of \( \mathbb{R} \) (Krantz et al., 1971) and (3) it is already assumed that the elements are ordinal scaled as preference ranking is not permitted with nominal scaled elements.

\(^{42}\) The comparisons could also be on more than one attribute as is the case in conjoint structures. For example, two attributes such as value and time could be used, which both then need to be considered commonly in the comparison and ordering process. For the sake of simplification, only one attribute is considered in the following without restricting the results to a single attribute case.
structure based on real numbers\textsuperscript{43}, i.e. a structure preserving map between two algebraic structures (Krantz et al., 1971). That means that a certain structure and the properties of a set of attributes can be preserved through mapping to real numbers and respective scales. There are several ways and different approaches for doing so. A general distinction can be made between deterministic and probabilistic representation with respective measure values (Rossi, 2009, pp. 1289–1290; Luce et al., 1990; Suppes et al., 1989; Krantz et al., 1971). Here, only the deterministic case is described and discussed as a base case. The probabilistic case usually\textsuperscript{44} encompasses more than one possible order.

To transform such scale values to another scale, Stevens presents a hierarchy of data scales based on the invariance of their meaning under different classes of transformations such as nominal, ordinal, interval and ratio scales (Stevens, 1946, 1951, 1957, 1968; Krantz et al., 1971). Such measurement scales that preserve meaning under a wide variety of transformations in some sense convey less information than those whose meaning is preserved by only a restricted class of transformation. Nominal scales are regarded as the lowest level of the hierarchy. They do not even require the assignment of numerical values rather than unique identifiers such as numerals, letters or colours. Ratio intervals convey most information compared with other classes and are regarded as the highest level of the hierarchy. Overall, a variety of different approaches exist in measurement theory to measure elements of a set $X$ as described above (e.g. Velleman and Wilkinson, 1993; Luce et al., 1990; Krantz et al., 1971; Stevens, 1959, 1951, 1946).

In research fields such as accounting, particularly intangibles, no commonly accepted measurement system has been established (Rodgers, 2007). However, it is widely accepted to use monetary measurement scales for accounting even though the current systems including monetary measurement scales often face significant challenges (Finkelstein, 2009, p. 1272; Rossi, 2009; 4.54 of IASB (2010)). Furthermore, the

\textsuperscript{43} The theorem of representation asserts that such a homomorphism can be constructed (Krantz et al., 1971).

\textsuperscript{44} If the probability of one specific order is 1, then it is identical to the deterministic case; if not, there is more than one possible order.
object “intangible” is not yet well understood, and relevant attribute(s) to measure intangibles have not yet been established and widely accepted.

The key practical challenge relating to intangibles measurement is the unique identification of the object under consideration, i.e. the intangible item, to allow for a proper ordering and hence the application of a measurement scale; if the objects are not clearly and uniquely identified, it is impossible for any measurement scale to provide meaningful results.

A measurement scale based on money, particularly on a specific currency, would meet the axiomatic requirements and thus be deemed as an acceptable measure of value. However, numbers assigned to intangibles, which cannot be ranked in that manner, do not meet the axiomatic requirements and hence these are deemed as not acceptable and measurable. This is often the case for SC methods across different intangible items, which cannot be ranked as required and, therefore, they do not comply with minimum measurement requirements.

In real life, a scale of measurement may not correspond precisely to any of these levels of measurement described above. Most measurements involve substantial pragmatic aspects (Hand, 2004).

In summary, a proper definition of the object to be measured is a prerequisite, as stated in previous sections. The object can be either all intangibles as a group or the different individual intangible items - i.e. each of them is separately regarded. As discussed in the previous chapter, there is no widely accepted definition of intangibles except that they are non-physical. An object that is not clearly defined

45 Assessing all intangible items separately may be a too big challenge at the moment. It is perhaps also not the most appropriate approach in the future. For example, knowledge workers in knowledge intensive companies are key to their business success. They are creating additional valuable knowledge through collaboration in networks (Iazzolino et al., 2016; Schneckenberg, 2009). Such networks, and consequently the knowledge creation process, are indiscernible (Tempest, 2009; Ehin, 2008). Knowledge is often referred to as a constantly changing, dynamic and collective flow of interconnected ideas which emerge in relationships (Nonaka et al., 1998). Innovation is created in network economies through the deliberate exchange and application of knowledge throughout a defined process; such a process may start with ideas and encompass research, development and the application (Schneckenberg, 2009). While shared knowledge among knowledge workers and their respective intangible-related outcomes is becoming increasingly important as a core source of value for a company nowadays, it may be evident that measuring individual intangible items - properly and accurately measure based on the currently available measurement tools - is very difficult, if not impossible, at present.
can hardly be measured precisely; without knowing exactly what should be measured, it obviously cannot be measured adequately. This issue was elaborated in more detail in the previous chapter. MC and ROA approaches define intangibles rather poorly and vaguely. DIC and SC approaches are more precise and granular in this respect, i.e. they identify and define single intangible items.

If the object is determined, the attribute or attributes to be measured have to be defined. The subject of interest in this thesis is value, which is a broad concept and can have several meanings. Owing to the different concepts of value, we could also consider using different definitions for value by adopting several attributes with each of them representing one particular definition of value. This approach would lead to conjoint measurement. Obviously, such variety in the definition of the attribute value leads to different measurement outputs. Even though a commonly accepted measurement scale would be used, the different definitions of value would very likely result in different results. Of course, attributes other than value are also possible.

Based on a definition of value, a measurement scale has to be determined. The measurement scale does not necessarily need to be expressed in monetary terms; it rather needs to fulfil certain minimum criteria such as possible ordering. It may be possible to find another measurement scale that maps the previous scale into a monetary measurement scale that is expressed in a specific currency. ROA, MC and DIC approaches refer to value as an attribute under measurement and use primarily monetary measurement scales based on a currency. SC approaches generally use non-monetary measurement scales. For many SC methods, the attribute under consideration is often unclear and therefore the measurement scale tends to be rather arbitrary and less useful. They often use numbers, which are referred to as indicators. Those numbers often refer to different scales that are rarely clearly determined, which makes it difficult or even impossible to aggregate those numbers in a meaningful manner. Measurement scales are often poorly defined for SC approaches. If, for example, an attribute is defined, it is classified as ‘very good’, ‘good’, ‘satisfactory’, etc. Afterwards, numbers are allocated similar to the school system, i.e. ‘very good’ equals 1, ‘good’ equals 2, etc. This kind of measurement scale is known as an ordinary scale based on the discussion above, which will also limit the whole measurement system for the intangibles of a company to a final ordinary scale.
Such an ordinary scale makes it impossible to map it afterwards to a unique monetary measurement scale to obtain a monetary result, either by a company presenting those monetary results or by a decision-maker translating the non-monetary measures into an equivalent\textsuperscript{46} that he/she can use to assess its (monetary) investment. Of course, mapping can be carried out in a practical manner, but it is doubtful that this is useful, as no user can rely on those measures because the uncertainty about the difference between their theoretical and expected reference points and the result could be regarded as too high.

### 2.3.3 Intangibles valuation methods

Valuation methods, as particular measurement methods resulting in monetary measures, should help managers, investors and other people involved in or concerned with making value-creating decisions. They are used for a variety of different investments such as companies and machines as well as intangibles\textsuperscript{47}. As it is widely accepted that no perfect measure exists for investment valuations and thus that the most appropriate measure needs to be found for a specific objective (Damodaran, 2002; Copeland, et al., 2000). This might also be the reason why different terms are used for different purposes relating to value in business valuation (Mard et al., 2007).

For example, the term fair value is usually used in legally created standards for certain transactions (Pratt et. al., 2000), whereas the term fair market value is widely used in the business world. This is defined as “the price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arms’ length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts” (Business Valuation Resources, 2001). Further terms relating to valuation include investment value or intrinsic value (Mard et al., 2007).

\textsuperscript{46} This process often takes place only in the mind of the decision-maker and hence it is hidden from anybody else. Refer to the empirical results relating to this issue in chapter 3.

\textsuperscript{47} It is assumed in the following that intangibles are clearly defined and identified; refer to previous sections for a more detailed discussion on this topic.
Those measures establish the measurement scale as defined above. They are also often referred to as performance measures, as they should explain the performance of an investment (Copeland et al., 2000).

As one measure that perfectly describes the performance of an investment does not exist, which is particularly valid for more complex investments, Copeland et al. (2000) suggest a comprehensive value metrics framework, which aims to overcome the disadvantages of different single performance measures by linking various economic measures to describe different aspects of performance. The framework consists of four classes of measures:

- Stock price/market-based performance measures (e.g. total returns to shareholders, market value added),

- Valuation approach-based measures\(^{48}\) (earnings multiple approach, DCF, real option valuation)

- Financial indicators-based measures (return on invested capital, growth (revenue, EBIT), economic profit)

- Value drivers-based measures (market share, cost per unit, value of R&D projects)

Each class of the framework should be adjusted depending on the valuation objective and investment in question. For intangibles, this means that all four classes should be applied, although the specific measures for each class of measures, as stated above, might differ; they might even vary from one intangible item to another. As a consequence for intangibles, more than just one measurement approach, as categorised above (MC, ROA, SC, DIC) should be employed. However, this comprehensive, holistic and flexible view on measurement without standardised procedures could result in arbitrary, non-comparable results across different items under measurement. Moreover, the decision-maker has to combine the various measures and information to create his/her own process to determine his/her own value for the investment in question. The latter means that the important process of

\(^{48}\) Copeland et al. (2000) term this class fundamental or “intrinsic value”-based measures, but here the more general term “valuation approach” is used.
converting the various single measures and information into a final value by the
decision-maker remains unknown.

Copeland et al. (2000) understand that market based performance measures are the
ultimate output measures of an investment’s performance. Valuation approach-based
measures are linked to market-based performance measures and aim to explain them,
even though differences remain between them, while the size of differences might be
dependent on the valuation approach chosen (Keuleneer et al., 2003). To
complement the comprehensive performance measurement framework, strategic and
operating value drivers that provide insights into where an investment performance
might go should be supplemented (Copeland et al., 2000).

These different valuation approaches are discussed in more detail in the following.
They belong to DIC methods. These methods are also referred to in financial
accounting standards to estimate fair value. Without making the other measures less
relevant for a comprehensive value metrics framework, the other classes are not
explicitly discussed. They belong to the ROA, MC and SC methods and, as such,
similar conclusions can be drawn for them. As the main objective of this chapter is to
describe and assess the different valuation approaches of monetary measurement
methods that approximate the market values of intangibles, such valuation
approaches are discussed in more detail. The discussion is not meant to indicate that
other measures are less useful in general as the appropriateness of a measure depends
on the measurement objective.

Valuation approach-based measures, i.e. monetary measures, are classified here
based on the suggested classification by Damodaran into three broad categories
(Damodaran, 2002; Copeland et al., 2000; Keuleneer et al., 2003):

- Relative valuation approaches
- DCF valuation approaches
- Contingent claim valuation approaches

Generally, relative valuation approaches aim to estimate the value of an asset by
looking at the pricing of comparable assets relative to a common variable. Such
variables could be earnings, cash flows, book values or sales. Most valuations are
relative valuations in reality (Damodaran, 2002).

DCF valuation approaches relate the value of an asset to the present value of
expected future cash flows on that asset (Damodaran, 2002). They aim to capture the
fundamental value based on the underlying expected cash flows of an asset in
contrast to relative valuation approaches, which only aim to identify comparable
variables and to reconcile their prices to the asset under consideration.

A more advanced class of valuation approaches is contingent claim valuation
approaches, which use option pricing models to measure the value of assets that
share option characteristics (Damodaran, 2002). These options can be classified as
real and financial options. They give the right, not the obligation, to take an action,
such as deferring, expanding, contracting or abandoning at a predetermined cost,
called the exercise price, for a predetermined period of time, the life of the option
(Copeland et al., 2001). In contrast to financial options, real call (put) options give
the owner the right to buy (sell) a non-financial asset – the underlying of the real
option (Trigeorgis, 2000). The advantage of this approach is that it should capture
operational flexibility and strategic adaptability to revise later decisions in response
to unexpected market developments and to consider the impact of project
interdependencies and competitive interactions in the valuation process (Trigeorgis,
2000).

Other categories are also suggested in theory and practice, but these can be
reconciled to the above categories. For example, the IASB (2015) uses in its
exposure draft ED 2015/3 related to the conceptual framework historical cost and
current values as accounting measurement bases. Those would correspond to the
relative valuation approaches proposed by Damodaran (2002). Cash-flow based
measurement techniques are deemed by the IASB to be used to estimate a measure
on a particular measurement basis, but they do not constitute a measurement basis
(6.4 and 6.5 in IASB, 2015). The other two valuation approaches from Damodaran
(2002) refer to that cash-flow based measurement technique. A more detailed
discussion of such categorization is not within the scope of this thesis.
In conclusion, no single valuation method seems to be superior to the others regarding intangibles valuation. Moreover, it seems that all such valuation methods are subject to a high likelihood of significant estimation errors, even assuming that intangibles are adequately defined and identified.

2.3.4 Uncertainly in measuring and valuing intangibles – understanding constituencies’ views and needs in external disclosures

Many authors in the literature argue that constituencies would like more information about a company’s knowledge value (Farooq et al., 2014; Ousama et al., 2011; Vafaei et al., 2011; Whitwell et al., 2007; Flöstrand, 2006; Holland, 2006; Lev et al., 2004). Moreover, they argue in favour of revised financial accounting standards to allow financial statement preparers to include more information and values concerning the company’s knowledge base (Alwert et al., 2009; Lev, 2008; Milost, 2007; Andriessen, 2004b; García-Ayuso, 2003; Lev, 2001). However, financial accounting standards setters are still reluctant to change current rules, as they believe that more information including valuations about intangibles are either not reliable, not comparable or not relevant (Abeysekera, 2008b; Arenas and Lavanderos, 2008; Skinner, 2008a; Stark, 2008; FASB, 2001). Both views from the literature and standards setters seem to be reasonable, but it is not clear what constituencies really want and how they view this issue. They do not necessarily need be interested in a monetary value, but they could be interested in more information about a company’s intangible values. They could also be interested in receiving such information only in those cases where it meets the qualitative criteria under an accounting regime such as the IFRS. However, what seems to be clear is that the measurement and valuation of intangibles remains an activity with uncertainty in the outcome due to the various reasons described above. Therefore, constituencies might take a more pragmatic approach towards this complex topic and want to receive more value related information with which they can make their own assessments. The following proposition will thus be empirically validated with constituencies:
P7: Constituencies find it useful and do want to see the valuing and reporting of knowledge in financial statements.

2.4 Current intangible assets disclosure issues illustrated in the case of the high-tech (particularly biotech) industry

The general and practical issues of intangibles disclosure is illustrated in cases of high-tech companies such as those from the laser industry, IT industry and biotech industry (for more details, refer to chapter 3). The latter sector is taken as representative of the high-tech industry as it shares several important characteristics with regard to intangibles disclosures.

The biotech industry, similar to other industries working in the high-tech and knowledge intensive area, is largely dependent on highly skilled people – who are capable of transforming their knowledge of biological processes into new results – and other non-tangible assets compared with tangible assets. More generally, biotech companies are strongly associated with intangibles related activities, i.e. intangibles are the primary value drivers of new services and products (Wolff, 2001, Tan and Lim, 2008). Physical assets are a minor part of the whole value chain of such companies. Value is created through the use and transformation of different types of intangibles into new products and services, which consist of intangibles as a main part of them again. Furthermore, biotech firms are often associated with substantial growth opportunities and high investments in R&D activities as well as with long development lifecycles for new products (Tan and Lim, 2008; Oliver, 2000).

Biotech stocks traded on organised trading facilities such as stock markets tend to be highly risky and volatile (Tan and Lim, 2008). The literature also indicates that non-financial data play a significant role in the valuation of biotech companies by

49 According to the biotech institute (http://www.biotechinstitute.org/what_is/glossary.html), “biotech” or “biotechnology” is defined as the use of biological processes to solve problems or make useful products. According to Article 2 of the Convention on Biological Diversity, “biotechnology” means any technological application that uses biological systems, living organisms or derivatives thereof, to make or modify products or processes for specific use (http://www.cbd.int/convention/articles.shtml?a=cbd-02).
individual investors, which is why biotech firms are difficult to value (Tan and Lim, 2008).

Another characteristic of biotech companies is that many of them are traded at a multiple of their book values, indicating that hidden knowledge assets are priced, at least estimated, by investors, but not disclosed in financial statements (Brennan, 2001). Such biotech companies are predominately listed in smaller market segments such as the German “Tech-Dax” (formerly “New Market”), and they are usually small or medium-sized companies. The biotech industry tends to be one of those industries relating to high-tech and knowledge intensive product development activities that might be most concerned by the current practice of the recognition or non-recognition of intangibles in financial statements. Surprisingly, little empirically research has been carried out relating to intangibles in high-tech companies including biotech companies (Cohen et al., 2007) and none related to the problem of intangible disclosures to constituencies through financial reporting.

As discussed in previous sections, the literature assumes that current financial statements do not contain sufficient and value relevant information as regards the intangibles of a company. To illustrate this issue, the biotech industry is chosen, which should be particularly concerned by the current shortcomings in financial statements with regard to intangibles disclosure due to its particular nature as knowledge intensive. High-tech companies, particularly biotech companies, can be regarded as social entities where cohorts of different types of intangibles are located; intangibles are created, refined and processed and outcomes produced based on such intangibles with little tangible input.

Several authors in the literature are also concerned that current financial statements do not reflect and properly recognise the specific characteristics of certain industries such as the biotech industry (Sriram, 2008; Tan and Lim, 2008; Andreou, 2007; Garcia-Ayuso, 2003; Lev et al., 1999; Wolff, 2001). As already indicated in previous sections, it is argued in the value relevance literature50 that trading market shares for a multiple price of the book value as well as the high volatility of shares – as indicators of the high uncertainty inherent in the company’s value – of those kinds of

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50 The value relevance literature refers to PAT, which is discussed in chapter 3.
companies are good indicators to explain that constituencies and particularly investors do not properly recognise, or might not be able to appropriately assess and consider, those specific characteristics of such companies (Gosh and Wu, 2007; Sällebrant et al., 2007; Mouritsen, 2005; Lev, 2001; Carroll et al., 2000; Edvinsson, 2000). However, these arguments are rather interpretations of empirical observations than the direct views of constituencies who are concerned by the scope and quality of intangibles disclosures. It does not seem to be clear whether and to what extent constituencies recognise intangibles related information in general and the specific characteristics of the biotech industry in particular. Therefore, it should be empirically validated directly with constituencies whether they already recognise value relevant information as regards intangibles in the biotech industry. The following proposition is thus validated:

**P8: Constituencies do recognise the main characteristics in the biotech industry, although they are not valued and appropriately reported in financial statements.**

A confirmation of this proposition would indicate that current financial statements lack decision-useful information in respect of intangibles. This could also mean that current financial statements no longer meet their objectives in this respect, which might be caused by an inappropriate conceptual framework. The latter is also claimed by the literature, i.e. that financial statements might still be useful for specific purposes, but that they do not fulfil their original purpose of providing useful financial information to estimate a firm’s value. Hence, constituencies might require more and other relevant information about a company’s intangible resources within financial statements in line with their original purpose (García-Meca and Martinez, 2007; Holland, 2006; Marr et al., 2003; Gelb and Zarowin, 2002; Barth et al., 2001; Barth and Clinch, 1998; Eccles and Mavrinac, 1995). In order to cope with

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31 See also previous propositions and section 2.2.1.1. Financial statements are a structured representation of the financial position and performance of an entity. Their general purpose is to provide information about the financial position, financial performance and cash flows of an entity that is useful to a wide range of users in making economic decisions as well as show the results of management’s stewardship of the resources entrusted to it (IAS 1.7). General purpose financial reports are not designed to show the value of a reporting entity but rather provide information to help existing and potential investors, lenders and other creditors estimate the value of the reporting entity (OB7 of IASB (2010)).
the potential enhanced information requirements, some authors would expect a change in current financial statements for such information (e.g. Lev, 2008; Ng, 2006; Nielsen et al., 2006; Lev, 2001; Anderson and Epstein, 1996; Mavrinac and Boyle, 1996). This change could be either a complete new set of financial accounting rules or rather additions/modifications to the current set of financial accounting principles as necessary (Skinner, 2008a; Skinner 2008b; Stark, 2008).

The following proposition is empirically validated to confirm/disapprove the views from the literature, particularly with regard to the need for decision-useful information relating to intangibles. It also confirms/disapproves the indicative result from the proposition above that current financial statements lack decision-useful information. As a consequence of this shortcoming, financial statements no longer fully meet their original purpose:

**P9: Constituencies do need more and different information than that in financial statements to make better decisions.**

### 2.5 Conclusion – the need for further empirical research

It has been shown in previous sections that current intangibles disclosure faces three main issues: definition and identification, measurement, and disclosure to stakeholders. Very few authors (FASB, 2001) take the issue of the disclosure of intangibles in published financial statements into account; most authors simply accept alternative intangibles disclosure besides the standardised external financial reporting, disregarding the problems around this approach.

There is no commonly and widely accepted approach to one of those main issues and it seems that intangibles disclosure is still in its infancy despite interest in theory and practice. In addition to the theoretical aspect, there is also very little empirical research about stakeholders’ perspectives on intangibles disclosure.

Therefore, there is considerable value in exploring in more detail these three main issues, particularly from the perspectives of constituencies such as investors and lenders who are interested in how a company uses the financial resources provided
by them. These issues are explored in more detail in the chapters that follow in order to understand the constituencies’ views, i.e. their understanding, expectation and minimum requirement for intangible disclosures. The outcome of the presented propositions will also guide the most suitable direction for enhancing current external reporting on intangibles.
Chapter 3 – Empirical research (part I)

3.1 Introduction and background for research approach

The previous chapter demonstrated that current intangibles disclosure faces several issues: definition and identification, recognition in published financial statements, measurement and appropriate disclosure to stakeholders. As there is no commonly and widely accepted approach towards these different issues and empirical work on intangibles seems to be scarce (Castro and Sáez, 2008), intangibles disclosure is still in its infancy despite interest in theory and practice.

Many authors have doubts about the usefulness of financial statements. They recognise the importance of significantly changing the current norms in order to make them decision-useful again, particularly due to the lack of appropriate intangibles recognition and disclosure (e.g. Jones, 2011; Kang and Gray, 2011; Holland, 2009; Lev et al., 2009; Lev, 2008; Li et al., 2008; Brás and Rodrigues, 2007; Ritter and Wells, 2006; Barth et al., 2001; Berkowitz, 2001; Lev, 2001; Lev and Zarowin, 1999).

There is a growing but still small empirical research literature about the different stakeholder’s perspectives on intangibles disclosure in financial statements (Farooq at al., 2014; Lev et al. 2009; Li et al., 2008). Most of these studies relate to so called value relevance studies in financial markets, i.e. that the relevance of intangibles related information has been shown by quantitative research using proxies to show relevance to investors investing in capital markets (Patel and Narain, 2009; Wyatt, 2008; García-Meca and Martinez, 2007; Gosh and Wu, 2007; Tan and Lim, 2007; Trueman et al., 2000; Chandra et al., 1999; Lev and Zarowin, 1999; Amir and Lev, 1996). Alternatively, they only relate to studies using research methods such as cross-sectional case studies and content analyses, which focus on the perspectives of specific companies from a particular region or industry (e.g. Castro and Sáez, 2008; 52 The reader is reminded that the terms ‘intangibles’ and ‘knowledge’ are used interchangeably (refer to chapter 2). In rare cases, the term ‘intellectual capital’ is also used, but only where it relates to intangible factors or approaches termed ‘intellectual capital’ by their respective authors. This approach is similar to Lev (2001) in order to avoid becoming stuck with the definitions.)
Durst, 2008; Cohen and Kaimenakis, 2007; Tovstiga and Tulugurova, 2007; Bontis, 2003; Gurthrie and Petty, 2000; Bontis, 1998). Only very few studies have analysed in more detail the needs and requirements of investors. For example, Ousama et al. (2011) perform an in-depth quantitative empirical study about financial analysts’ views of intangibles using (structured) questionnaires. Whitwell et al. (2007) study financial analysts’ perspectives in respect to intangibles through semi-structured telephone interviews and Holland (2006) focuses on studying the needs of fund managers relating to intangibles using unstructured interviews. Holland (2006) finds that intangibles information plays an important role in UK fund managers’ decisions. The problem with the group of analysts as representatives of the investor group is that they are not decision-makers for investments. They only provide information and recommendations as advisors to decision makers (Whitwell et al., 2007). Therefore, they are not directly punished for poor decisions. Moreover, it is not even clear whether and to what extent such information is used in the investment decision of an investor (Guimón, 2005). However, all research studies relating to the usefulness of intangibles information for analysts have shown that they are highly interested in such information and essentially demand it (Ousama et al., 2011; Whitwell et al., 2007; Lim and Dallimore, 2002; Desai, 2000; Eccles and Mavrinac, 1995). In addition to those studies focusing on investors, very little research exists on intangibles relating to stakeholders other than shareholders (Core, 2000; Healy, 2001). Only two studies analyse creditors’ views of intangibles: Guimón (2005) uses two case studies, one with Banco Santander Central Hispano and the other with European Investment Bank, to show the importance of intangibles reporting within the lending process, while Ousama et al. (2011) use (structured) questionnaires for their analysis.

All these studies about investors and creditors’ views of intangibles relate to the discipline of financial market research. Very few studies such as those by Whitwell et al. (2007), Holland (2006) and Guimón (2005) apply qualitative research strategies relating to intangibles in financial market research. However, none of them addresses accounting norms for intangibles recognition including the definition and identification of intangibles, measurement and disclosure.
It is important to emphasise that standards setters generally have a broad view of financial accounting regulation. They are not only interested in whether something might be generally value relevant for shareholders or not; they aim to ensure that financial information provided in published financial statements is useful for all relevant stakeholders. These stakeholders encompass investors and creditors in a broadly defined manner including customers and employees with claims and potential future lenders and investors (e.g. US-GAAP - SFAC No. 1, paras. 30 and 35). Consequently, financial accounting regulators have to look at different stakeholders and not only at a single group for the amendment of existing or developing of new financial accounting standards. Hence, the lack of broader in-depth research into the views of different groups of stakeholders on intangibles might be why standards setters are still reluctant to adopt more flexible reporting rules for intangibles (Jones and Dean, 2009; Holthausen and Watts, 2001). Standards setters are even of the view that firms will voluntarily publish information that might be value relevant for their stakeholders and, therefore, they do not see the need for new financial accounting regulation for intangibles (Harvard Law Review, 2002). Another reason could be that none of these studies are directed towards proposing new financial accounting rules but rather providing evidence of the possible lack of usefulness of current financial accounting rules.

Research about financial accounting for intangibles and related policy recommendations remain the domain of normative accounting researchers\(^53\) such as Skinner (2008a), who critically assess accounting rules and base policy recommendations on their personal opinions, but generally do not perform research studies using qualitative or quantitative research methods to support their arguments. Empirical research about intangibles disclosures and respective policy recommendations is not even on the agenda of the respective research communities (Gerpot et al., 2008). Therefore, the following sections explore in more detail the main issues of definition and identification, recognition in published financial statements, measurement as well as the appropriate disclosure of intangible related information to stakeholders.

\(^{53}\) For a more detailed discussion about normative accounting research and, as the current alternative, positive accounting research, refer to the next section.
This study is different to existing research and contributes to the intangibles accounting literature in the following manner (see also Graaf, 2013; Rutherford, 2010; Holland, 2009; Wyatt, 2008; Holland, 2006; Mattessich, 1995):

This study uses, as will be described in more detail, a qualitative research strategy to perform in-depth research into the views of different stakeholders. These groups consist of chief financial officers (CFOs) of companies as preparers of published financial statements (senders of intangibles related information) as well as parties outside these companies such as statutory auditors, investment fund managers (IFMs) as investors and credit officers as representatives of banks responsible for lending decisions (receivers of intangibles related information). Investors and creditors as external parties to the companies, together with other external stakeholders or constituencies, are interested in how a company uses the financial resources provided by them in order to derive (financial) decisions. As the group of stakeholders are broader than shareholders only, the objective is to gain a broader understanding of stakeholders’ needs and views (in contrast to the pure shareholders’ view; see also Alam, 2010). Representatives of companies are also involved as they generally have the best and most in-depth knowledge about the companies under consideration. More precisely, the objective is to gain insights into the understanding, expectation and minimum requirement for intangible disclosures from these selected groups.

Based on insights from these stakeholders, it was initially planned to develop a holistic intangibles valuation and reporting approach useful and applicable within financial statements, i.e. which fits well into the current financial statements framework. However, the initial research results showed that from a users’ point of view an IDF model is more appropriate. Therefore, the initial plan to develop a holistic intangibles valuation and reporting approach was modified. The IDF was developed then based on the initial research and research performed in particular to meet the modified plan. Following the development of this new IDF model, it was validated in depth with financial statements users such as investors and banks.

Finally, policy recommendations were derived from the empirical research, i.e. modern financial accounting research was combined with normative accounting research. These policy recommendations respond to the views of some normative accounting researchers about the appropriate disclosure of intangibles in addition to
existing disclosure requirements (Skinner, 2008a; Skinner, 2008b; Stark, 2008; FASB, 2001).

Therefore, this study fills the gap of a qualitative empirical research study supporting the recommendation of new normative financial accounting rules. It further provides in-depth insights into stakeholders’ views through a qualitative research strategy on intangibles, particularly on definition and identification, recognition for financial statement purposes and measurement and disclosure (Ousama et al., 2011; Jones and Dean, 2009).

This study can be characterized as prescriptive; it provides policy-relevant inferences. It is normative in nature, but it is expanded to combine this with qualitative empirical research to find a suitable means - i.e. policy implication - which is referred to as conditional-normative.54 While current financial accounting research is performed in the fields of NAT and PAT, the standard setting process55 is largely separate from them. Figure 3.1 summarizes these relationships.

Users56 of financial statements only provide comments if requested by the standard setters and they are in the interest of their respective companies (Durocher et al., 2007; Laughlin et al., 1983; Laughlin et al., 1981). This study reshuffles these

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54 It can be also referred to as a normative-based empirical research study, which is consistent with calls in accounting for more empirical research in normative, critical-interpretive accounting research (Gallhofer et al., 2013; Laughlin, 1995).

55 This is often referred to as a political consensus process for various standard setters such as the FASB and IASB, as it seems to be accepted that accounting regulation can only be political whereas the political claims are justified by the ‘interest of’ - for example, financial statement users or society as a whole (For a more detailed discussion, refer to, for example, Bengtsson, 2011; Rutherford, 2011; Laughlin, 2007; Lowe et al., 1983; Laughlin et al., 1983).

56 As referred to by IASB (2010); refer also to section 2.2.1.1.
relationships and combines NAT with the standard setting process through empirical research into the users’ needs to gain insights from them. Figure 3.2 summarizes the core approach in this study.

This CondNAR study is particularly concerned with the financial accounting of intangibles under IFRS rules; it therefore also takes into account the IASB’s framework. In other words, the issue of intangibles accounting under IFRS could be taken as illustrative of the CondNAR in action. It starts, in a normative way, from the IASB’s conceptual framework (2010). According to OB2 of IASB (2010), the objective of financial reporting is to provide financial information that is useful to existing and potential investors, lenders and other creditors in making decisions about providing resources to the entity: i.e. decision-usefulness is the key attribute financial reporting has to fulfil. Hence, decision-usefulness, as defined by IASB (2010), is also set as the starting point and as the ‘end’ of Mattessich’s means-end relationship incorporated in the CondNAT for this study. Usefulness is given as an externally set accounting objective: the possible means of achieving it is to be examined. Here, the ‘means’ refers in particular to the subject of intangibles financial accounting rules, or, more precisely, to finding a most suitable and acceptable
financial accounting rule through empirical research to achieve the objective of usefulness.\footnote{As Mattessich puts it in his conclusion: “conditional-normative methodology […] requires the formulation of means-end relations, indicating the means that lead (under specific circumstances) to a stipulated goal. These relations, so characteristic of the applied sciences, have to be found and confirmed empirically” (1995: pp. 278–9). Illustrations for conditional-normative research given by Mattessich (1995) relate to the investigation of whether user-specific qualities are present in accounting data or whether a specific valuation method meets a financial accounting standard objective and, if not, which valuation method would meet the objective. Mattessich states that finding the proper means-end relations may encompass a rigorous analysis along with an iterative refinement process through empirical research methods (Mattessich; 2002; Mattessich, 1995).}

It should be noted that cost is, according to BC3.47 of IASB (2010), a pervasive constraint that should be kept in mind when considering the benefits of a possible new financial reporting standard. Cost is not a qualitative characteristic of information. It is a characteristic of the process used to provide the information. While there is little empirical research about the actual cost of implementing a new financial accounting standard (Loyeung et al., 2016; Morris et al., 2014; De George et al., 2013), there are some analyses as regards the benefits. However, according to Loyeung et al. (2016), there is a mixed view from empirical research as to whether new financial accounting standards from the IASB generally improve the quality of financial reporting (i.e. the usefulness of them). Compared to such empirical work related to the IASB’s objective of usefulness, Puxty et al. (1983) give an analytical account of whether and under what conditions new financial accounting standards can generally increase social welfare (i.e. economic benefits). They come to the conclusion that the criterion of decision-usefulness may only be an appropriate accounting objective to increase social welfare if a perfect market is assumed, where firms and investors are unchanging, randomly distributed and with few interconnections. If these conditions are not met, which is deemed the case in general nowadays, improvements in information disclosure do not necessarily lead to greater welfare (Puxty et al., 1983; Laughlin et al., 1981). Alternative financial accounting objectives could be an organizational perspective (refer to section 2.2.1.1) or a balanced view between organizational and user needs depending on the current socio-economic environment (Puxty et al., 1983). Puxty et al. (1983) deem the latter more appropriate because of the current socio-economic environment, which is characterized by tighter clustering in addition to the actions and reactions of firms.
and users in relation to the available information, including their interactions with each other.\textsuperscript{58}

This study is based on the given criterion of usefulness by the IASB (2010). The assessment of whether the criterion of usefulness as an objective in the IASB’s conceptual framework is the most appropriate one is beyond the scope of this study. However, as cost/benefit is a relevant criterion to measure the efficiency of the reporting process according to the IASB’s conceptual framework, it is also considered in the empirical research part of this study, but from the point of view of users and partly providers, as also set by the IASB (2010), but not from a social welfare perspective. This may indeed lead to a scenario where the welfare may not be greater than before the new IDF was implemented, while the case study participants may see a greater value—i.e. greater benefits compared to the costs associated with implementing the new IDF. The reason for this divergence may be manifold. One reason could be that investors would like to see more intangibles-related information that gives a firm a competitive advantage in the market, whereby the firms may lose competitive advantage through this disclosure as other competitors may receive the same information as the investors. This reason may not generally be refuted by the fact that some organizations are willing to share such information, as also shown by the interviews, because they may also find greater benefits from disclosing such information.\textsuperscript{59}

The remaining sections of this chapter are organised as follows:

Section 3.2 clarifies the research methodology. It determines the research objective, which addresses the specific, researchable problem and explains what the research project is expecting to accomplish (Ethridge, 2004, p. 108) (3.2.1). Having established the objective, the research strategy is defined in line with the objective (3.2.2). In section 3.2.3, relevant principles for research quality assessment for the selected research strategy are discussed. The research strategy paves then the way to

\textsuperscript{58} The analysis by Puxty et al. (1983) may also be conceptually regarded as a kind of conditional-normative approach as different ‘means’ - i.e. the appropriate accounting criterion - are analysed to find the most efficient means for the ‘end’ - i.e. greater welfare.

\textsuperscript{59} For a more detailed discussion about this general subject of disclosure value from a user’s and provider’s perspective, refer to Laughlin et al. (1983, 1981).
the research design employed, which encompasses approaches for data collection, entering the field and data analysis (3.2.4). The results of the fieldwork are discussed in section 3.3. Section 3.4 discusses the refinement of the research approach in order to obtain additional information from the research field. A summary of this research part is provided in section 3.5.

3.2 Research methodology

3.2.1 Research objectives

The literature review showed several opinions and research results as to whether:

- current financial statements still fulfil their original purpose;
- current stakeholders recognise the main characteristics of companies in general, and more particular those of knowledge intensive high-tech companies, and if so, to which degree and how do they recognise them;
- stakeholders need more, different and more differentiated information to that currently published in financial statements to make better decisions;
- stakeholders find it useful and want to see valuation and in general more disclosures of intangibles/knowledge in current financial statements;
- stakeholders already recognise the value of the intangibles of knowledge intensive companies outside the current financial reporting framework and if so, how and to what extent they integrate such information into their decision-making processes;
- stakeholders have a different understanding of the term; knowledge/intangibles among each other and compared with the literature;
- stakeholders have a different understanding of reliability with regard to information about knowledge/intangibles in published financial statements;
- stakeholders require that information about knowledge/intangibles in financial statements are in accordance with the current financial accounting framework;
- the knowledge/intangibles valuation models proposed in the literature as highly relevant are also considered to be useful and relevant, at least to a certain extent, by stakeholders.
These opinions and results in the literature are not reflected in and are often in stark contrast to current practice and the accounting standards used for published financial statements as discussed in the previous chapter. One of the key questions here is why the literature and current financial accounting practice are so disconnected. As will be argued, the research methodologies currently applied in accounting research may have contributed to this situation.

The list of issues stated above can be summarised to arrive at the following overall research aim of this study: Enhancing the usefulness of financial statements in respect of intangibles related financial information for their users, i.e. to derive and propose an intangibles related disclosure framework that is useful and relevant to the needs of users, acceptable to providers, auditors and standard setters and improves currently published financial statements. Several research objectives are defined to achieve this aim:

- Understanding the needs and views of financial statement providers, users and auditors in relation to the disclosure of information on intangibles;
- Identifying factors that will improve the current practice of financial reporting with regard to intangibles in currently published financial statements;
- Developing a model of intangibles disclosure that meets the users’ needs, improves on current disclosure and is acceptable to providers, auditors and potentially to standard setters;
- Validating the acceptability and efficacy of the model derived with all the constituencies identified above.

These objectives are aimed at contributing to CondNAT (Mattessich, 1995).

The research conducted here relates to the behavioural accounting research discipline, which can be seen as the accounting equivalent of behavioural finance (Down, 2004). This combines research in financial accounting with behavioural aspects in social sciences, as it uses social, cognitive and emotional factors in understanding the use and effects of information on the accounting decisions of different parties such as borrowers and investors (Moll et al., 2010; Gillenkirch and Arnold, 2008; Lord, 1989).
This study could also be related to decision makers and decision models-related research, which again relates to the strong user-orientated research according to Laughlin (1981; refer also to section 2.2.1.1). This distinction refers to the need to analyse what the decision makers say they want for their decisions and what they actually need (Laughlin, 1981; Sterling, 1970). Therefore, this study could be seen as aiming at contributing to an ‘ideal decision model’ that combines both in respect to enhanced intangibles disclosure.

As will become evident in the course of the research, this study could also be related to the predictive ability literature, because the new IDF model has predictive merits through the details of disclosed intangibles related information and in particular through the empirical findings related to reliability and verifiability. As described in section 2.2.1.1, predictive ability belongs to the weak user-orientated studies according to Laughlin et al. (1981).

The vast majority of empirical financial accounting research relates to PAT (Kabir, 2005). One of the reasons for the dominance of PAT in empirical financial accounting research is that research towards the objectives of normative accounting theory (NAT) is deemed to offer too few opportunities for empirical research work compared with PAT (Smith, 2009).

The general main distinctive characteristics of PAT and NAT are described below. Although the epistemological positions of PAT and NAT are deemed fundamentally different by the most radical representatives by each of them, because PAT relates to positivism/realism/empiricism and of NAT to interpretivism/idealism, they both emerge in an empirical context. They both may not be what they pretend to be: PAT is strictly speaking not free from value judgments (Mattessich, 2002; Archer 1998; Tinker et al., 1982) and the normative theories, which had been developed over the past decades, are not readily taken up and used in practice (Laughlin, 1995). The lack of value free PAT related research could be regarded in such a way that a ‘synthesis’ of both schools, positive accounting and the ‘critical-interpretive’ could be feasible (Archer, 1998; Mattessich, 1995) or at least PAT and NAT may not be as far away from each other as the discussion below may suggest. Despite this divide in the literature between PAT and NAT, bot have contributed significantly to the development of the financial accounting research in general (e.g. Roslender, 2013).
PAT, which also relates to behavioural accounting, aims to explain and predict accounting practice, i.e. accounting decisions (Watts and Zimmerman, 1990; Christensen, 1983). PAT has arisen from criticism on NAT, which was directed at generating policy description and prescriptions for management and public policy (Jensen, 1983; Watts and Zimmerman, 1979; Watts and Zimmerman, 1990). PAT focuses on capital market-based accounting research and research in accounting choices such as why does management choose certain accounting methods and not others, what incentives and constraints does management face in making accounting choices and why does management switch from one accounting method to another (Watts and Zimmerman, 1986; Watts and Zimmerman, 1990).

PAT does not, and does not intend to, make proposals for new or amended financial accounting standards regulations based on empirical research. It intends, but is also limited in this sense, to predict and explain issues based on existing financial accounting regulations. In simple terms, PAT takes current financial accounting regulations as given and bases further research on them, but it does not contribute to the process of drafting new or revising existing financial accounting standards. Lowe et al. (1983) argue that PAT is a simplified theory of accounting policymaking that is lacking in logical and empirical validity. This is because it uses simplified models of policymaking interactions that are unable to capture, due to the limited number of variables of a complex process that consists of many more variables, the full richness of decision making and hence present a false picture of the policymaking process.

Furthermore, most financial accounting research, particularly that relating to PAT, is based on quantitative empirical research (see Bédard & Gendron, 2004; Watts & Zimmerman, 1990). A more detailed discussion on PAT’s assumptions and critiques is beyond the scope of this thesis (see, for example, Raffournier, 1990; Williams, 1989; Demski, 1988; Whittington, 1987; Christenson, 1983; Tinker et al., 1982).

Surprisingly - or maybe as a logical consequence of the dominance of PAT in financial accounting research - there is very little research on the desirability of accounting standards in financial accounting theory (Dye and Sridhar, 2008) and even less on a particular accounting standards proposal based on users’ points of view (i.e. an empirical accounting standards prescription proposal). However, many authors in the literature are calling for such research and the application of a variety
of research methods other than those related to PAT (Glover, 2014; Roslender; 2013; Laughlin, 2007; Laughlin, 2004; Broadbent, 1997; Laughlin, 1995).

As indicated above and in contrast to PAT, NAT focuses on financial accounting standard prescriptions. It is associated with value judgments, which are deemed as neither objective nor accessible to empirical verification or disproof (Mattessich, 1995)60.

However, the research aim – together with the related objectives – here is towards a proposal for a financial accounting standard prescription that is based on empirical studies. Therefore, the research is performed towards NAT, which is modified compared with its traditional version as described above. Mattessich (1995) refers to this type of research as CondNAT, which empirically validates whether the recommended means - here in a broader sense relating to accounting standards on intangibles - lead to the desired ends, namely the usefulness of financial statements. Mattessich (1964; 1970; 1972) already indicated his idea of CondNAT in earlier publications. Those publications could be considered as the foundation of CondNAT. He raised the question of what kind of information users would desire or need for what purpose, which should be then verified empirically. It was rather implicit at that time and in the context of his formulation of the general theory of accounting, and in particular the formulation of hypotheses for specific accounting purposes which should be empirically validated. Or, as Mattessich (1995) said, “… there was some hope that the notion of a purpose-oriented (i.e. conditional-normative) accounting theory might […] receive wider attention” following the official recognition (AICPA/AAA award) of his 1972 article.

In this respect, the research here could also be regarded as validating the methodology proposed by Mattessich and contributing to closing the gap between accounting practice and theory (Rutherford, 2010; Fülbier et al., 2009; Mattessich, 2002; Mattessich, 1995; Shapiro, 1997). This research may also be regarded as falling into what Laughlin (1995) refers to as middle-range thinking.

60 See Skinner (2008a; 2008b) and Lev (2008), a positive accounting researcher, for an interesting exchange where Lev commends “Skinner for urging researchers and policy makers to base their recommendations on solid research” – but he refers (only) to positive accounting research!
The research aim and objectives of this study lies in the boundary area between companies and their executives, the financial market such as fund managers and credit institutions, regulators as well as financial reporting and more generally public disclosures as described by Stoner et al. (2004). The research explores the role of financial reporting and disclosure practice on this boundary in the context of intangibles and aims at developing a theory for the public disclosure of intangibles as a proposal for financial accounting regulators such as the IASB. In addition to the disclosure proposal for intangibles, this research also contributes to the literature on qualitative research in financial accounting and to the discipline of CondNAT. It seems to be difficult, or even impossible, that the research objectives determined in this study can be satisfactorily achieved by a conventional research approach towards PAT objectives alone.

The next section describes the research strategy for this study based on the objectives defined above.

### 3.2.2 Research strategy

The research strategy should offer consistent guidance to achieve the predefined research objectives. It provides a general orientation to the conduct of the research (e.g. Bryman, 2001). It is a way to achieve the objective. The research strategy should also be in line and respond to the research objectives and research questions.

Research can be conducted as qualitative or quantitative, although some authors regard this distinction as not useful or even false (e.g. Layer, 1993; Layder, 1993). However, this study follows this distinction in line with some previous studies (see Denzin and Lincoln, 2005; Holliday, 2002; Bryman, 2001), which also seems to be a common distinction in the literature about empirical research methods (Samkin and Schneider, 2008), in order to provide a framework for this thesis.

Even though there is no clear cut division between both approaches, they generally differ in several ways (Denzin and Lincoln, 2005). A general criterion to differentiate between qualitative and quantitative research is that **quantitative research** employs measurement and qualitative research tends not to do so (Bryman, 2001). The overall...
Aim in quantitative research is to control as much as possible by reducing the influencing variables so that the experiment can be replicated with different groups to validate the proposition repeatedly (Holliday, 2002). Quantitative research often refers to research that counts something, uses statistical methods to analyse issues and expresses results in numerical form (Gomm, 2008). It is also described as a research strategy that uses large sample sizes of individuals that should complete a standardised set of questions to generate a set of structured data that can be coded and expressed in numerical form (Elliott, 2007).

Qualitative researchers are often mainly interested in knowing and investigating how people see and experience their world and how they make sense of it (Gomm, 2008; Denzin and Lincoln, 2005). They want to discover, rather than test/validate, variables from the experience and knowledge of participants (Corbin and Strauss, 2008). It is a research strategy that adopts a less structured set of questions, allows the respondents to elaborate more on predefined topics (i.e. to set the agenda within the parameters of the topic under investigation) and generates rich textual or observational data. The emphasis on textual or observational data in contrast to numerical outcomes causes the name qualitative research (Elliott, 2007). It is a field of enquiry that crosses topics, subjects and disciplines and that is much less structured and numerical outcome-focused than quantitative research (Denzin and Lincoln, 2005). Or simply, qualitative researchers aim to gather an in-depth understanding of human behaviour and the reasons that govern such behaviour. They are more interested in investigating the why and how of decision-making, not just in the extent of the variance in causal relationships between two or more variables. Hence, smaller but focused samples are more often needed rather than large random samples (Moll et al., 2010).

Generally, qualitative and quantitative research strategies are associated with different philosophical assumptions (Creswell, 2007; Bryman, 2001). These philosophical beliefs effect how a research study is or should be conducted (Ethridge, 2004; Collis et al., 2009). These philosophical assumptions relate to questions concerning the nature of reality (ontological issues), what is or should be accepted as valid knowledge (epistemological issues) and the role of values (Collis, 2009; Moses et al., 2007; Creswell, 2007; Bryman, 2001). Questions relating to the process of
research and the principal orientation to the role of theory in relation to research (Creswell, 2007; Bryman, 2001), i.e. whether the research strategy is deductive or inductive in nature, as well as language of the research (Creswell, 2007) are also discussed in the literature relating to different philosophical assumptions. A deductive approach is used to test/validate general claims, laws or theories through hypotheses/propositions, whereas an inductive approach derives general claims, laws and theories from particular facts or individual cases (Moses and Knutsen, 2007). Deductive approaches are most often related to quantitative empirical research whereas inductive approaches are most often associated with qualitative empirical research. Those are some distinguishable criteria, although they are not exclusive.

It should be noted that the distinction between qualitative and quantitative research strategies is not as clear-cut as explained above. For example, positivism has been developed further towards post-positivism, which aims to apply the general principles of positivism to qualitative research (Samkin and Schneider, 2008; Denzin and Lincoln, 2005; Holliday, 2002). However, a principal distinction could be made as shown in Table 3.1.

<table>
<thead>
<tr>
<th>Principal orientation to the role of theory in relation to research</th>
<th>Quantitative</th>
<th>Qualitative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal orientation to the role of theory in relation to research</td>
<td>Deductive; testing of theory</td>
<td>Inductive; generation of theory</td>
</tr>
<tr>
<td>Epistemological orientation</td>
<td>Natural science model, in particular positivism</td>
<td>Interpretivism</td>
</tr>
<tr>
<td>Ontological orientation</td>
<td>Objectivism</td>
<td>Constructivism</td>
</tr>
</tbody>
</table>

*Table 3.1: Principal distinction between qualitative and quantitative research*
*Source: Bryman (2001)*

As described in the previous section, the research objectives of this study are:

- understanding the needs and views of financial statement providers, users and auditors in relation to the disclosure of information on intangibles;
- identifying factors that will improve the current practice of financial reporting with regard to intangibles in currently published financial statements;
• developing a model of intangibles related disclosure that meets the users’ needs, improves on current disclosure and is acceptable to providers, auditors and potentially to standard setters;
• validating the acceptability and efficacy of the model derived with all the constituencies identified above.

To achieve these objectives, a qualitative research strategy is adopted in this study. Experts in this field and users of financial statements are interviewed to understand in detail their views of current financial statements, understand the usefulness of financial statements for decision-makers and assess whether intangibles valuation and reporting could improve the usefulness of financial statements. This qualitative research strategy is selected as it provides rich information around this topic and allows the author to obtain broad and unique insights into the decision-making processes of constituencies as well as the information and data associated with them (Elliot, 2005; Holliday, 2002; Bryman, 2001; Creswell, 2007). As Elliot (2007, p. 2) indicates, this kind of interview generates rich information and data and allows the author to delve into the depth of specific issues.

A typical generalised qualitative research process can be described in Figure 3.1, which will also be used as an initial guide through the research process.
The qualitative research process selected for this study extends the typical process for qualitative research studies as follows (Figure 3.2).

Figure 3.4: Extension of typical qualitative research process

This research process is used as an initial guide, but the later research study is more an iterative research weaving back and forth between data and theory rather than a straightforward research study as explained later.
3.2.3 Assessing research quality

The quality of research designs and methods as described above can be generally assessed on certain criteria such as reliability, replicability and validity comprising internal as well as external factors, i.e. generalisability (Bryman, 2001) as well as objectivity and usefulness or relevance (Gomm, 2008; Creswell, 2007). Those criteria are established mainly for quantitative research. They are less meaningful and rather problematic for qualitative research and therefore equivalent terms have been defined for qualitative research (Corbin and Strauss, 2008; Gomm, 2008; Creswell, 2007; Charmaz, 2005a; Bryman, 2001). Guba (1981) and Lincoln and Guba (1985) propose trustworthiness with different related criteria for qualitative research studies. These criteria have parallel meanings in quantitative research (Table 3.2).
<table>
<thead>
<tr>
<th>Criteria for qualitative research</th>
<th>Meaning</th>
<th>Criteria for quantitative (traditional) research</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credibility</td>
<td>Credibility is achieved if the research is carried out according to the principles of good research practice in qualitative research. Therefore, the research process has to be clearly described to allow the reader to accurately judge how the data were collected, the analysis carried out and the conclusion drawn. Credibility can be sometimes enhanced if findings are confirmed by participants to ensure that the researcher has correctly understood the subject under investigation.</td>
<td>Internal Validity</td>
<td>Relates mainly to the issue of causality, i.e. whether a conclusion holds which is based on causal relationships between two or more variables</td>
</tr>
<tr>
<td>Transferability</td>
<td>As qualitative research results tend to be contextual and unique to the aspects of the studied social world, qualitative researchers should produce extensive description, i.e. rich accounts of the details, in order to allow other researchers to judge about the possibility to transfer research findings to other contexts/millieux</td>
<td>External Validity/Generalizability</td>
<td>Issue of whether the results of a research study can be generalized beyond the specific research study</td>
</tr>
<tr>
<td>Dependability</td>
<td>Qualitative researchers should adopt an audit based approach, i.e. they should ensure that complete records are kept at and of all phases of a research process in an accessible and sufficiently detailed manner</td>
<td>Reliability (and replicability)</td>
<td>Reliability relates to the issue of whether results of a study can be repeated (replicated). Replicability requires from the researcher that his/her procedures are described in great detail.</td>
</tr>
<tr>
<td>Confirmability</td>
<td>Qualitative researchers should show that they have acted in good faith. Personal values or theoretical inclinations should effect the conduct of research and related derivation of findings from it only to a limited extent.</td>
<td>Objectivity</td>
<td>Objectivity relates to the fact that no research in social sciences is completely objective, but researchers should give an objective account of their research</td>
</tr>
</tbody>
</table>

*Table 3.5: Criteria for assessing qualitative and quantitative research design and methods*  

It is particularly worth noting that in qualitative research, it is generally not expected to achieve generalisability from the small sample size to a population (Collis et al., 2009; Corbin and Strauss, 2008; Gomm, 2008; Creswell, 2007; Moll et al., 2006; Charmaz, 2005a), which is almost impossible to enumerate in a precise manner (e.g. Vaivio, 2008). Moreover, the research findings are usually context-specific, difficult to replicate in other contexts due to access constraints and not necessarily stable over time (Gomm, 2008; Berry and Otley, 2004; Bryman, 2001). However, according to Bryman (2001), research findings are open for generalisability to theory instead of to populations based on statistical criteria. Further, they can advance theory (Stake, 2005) if their theoretical inferences from the qualitative data are made properly and
the research process is disclosed in all details in order to allow other researchers to assess the generalisability and judge the researcher’s credibility (Corbin and Strauss, 2008; Holliday, 2002; Bryman, 2001).

Further criteria for qualitative research are suggested in the literature. For example, Miles and Huberman (1994) also indicate applicability as equivalent to usefulness in general social research. Other criteria have no equivalent terms in general social research, particularly in quantitative research studies. Examples of such criteria are proposed by Lincoln and Guba. They indicate criteria for authenticity (Lincoln and Guba, 1985), but those criteria do not seem to be influential in assessing the quality of qualitative research (Bryman, 2001). Furthermore, Hammersley (1992) proposes relevance as another criterion that relates to the importance of a research topic within a certain field and its contribution to it, even though this seems to be a necessary criterion for quantitative research as well. Finally, the transparency of the research method to collect and analyse data is proposed to be another key criterion for good qualitative research (Gurd, 2008; Johnson et al., 2006), although transparency is rather a prerequisite for transferable and credible qualitative research.

This study is based on a qualitative research strategy. Therefore, credibility, transferability, dependability and confirmability should be the key assessment criteria for this study.

As described above, this research study adopted several research designs, which enhance the credibility of this study as discussed in section 3.3. Credibility is, as discussed above, the equivalent meaning within a qualitative research context compared to internal validity within a quantitative research context. The concept of internal validity would have been also difficult to apply for this study, as this study is not only qualitative in nature, but it also describes a model building approach for financial accounting theory which requires a certain degree of judgement (refer to chapter 4). For example, the interviewees have provided several factors which are deemed as useful for intangibles related financial reporting, but they have not provided a construction plan in all details how to put them together in an acceptable manner. As described in chapter 4, model building in financial accounting theory requires a certain degree of judgment based on clear principles. Therefore, a mathematical unique relationship between the different variables are obviously not,
and could not be, established in this study. However, this study clearly describes the principles for the judgements and how judgement is used in building the new IDF model. It even describes a research process for future research relating to CondNAT. Therefore, for those who assess the quality of qualitative research based on internal validity, the weaknesses as regards to internal validity in this study are overcompensated by the clear description of the research process and findings. However, similar to, for example, Gomm (2008), Creswell (2007) and Bryman (2001), credibility seems to be the more suitable concept for assessing this study and credibility is achieved through the clear description of the research process and the use of triangulation.

Furthermore, a qualitative research using interviews are generally deemed as limited for generalisation (Corbin et al, 2008; Gomm, 2008; Creswell, 2007; Charmaz, 2005a; Bryman, 2001). As discussed above, it is not expected in general to achieve generalizibility based on a relatively small sample size compared to quantitative research. However, the research findings are open for generalizability to theory through proper theoretical inferences from qualitative data and high transparency of the research process to allow other researchers to judge the credibility of the research (Corbin et al., 2008; Stake, 2005; Holliday, 2002; Bryman, 2001). This is done in the previous sections and in the chapters that follow. Moreover, the second case study uses different financial statements users from different industries and regions to ensure generalisability of the developed IDF model to financial accounting theory. However, there may be some limitations to the generalizability of this study (refer also to section section 6.5). For example, the IDF model might be less relevant for financial statements users of lower league football clubs, which are not publicly traded on a stock exchange as the intangible value within these “firms” might be limited and the usefulness of the IDF model for the limited number of users might be low. This issue relates to the fact that all types of companies from different industries should generally adopt a common set of standardized financial accounting rules such as IFRS even though many rules are less relevant, not applicable or not useful at all for some companies. However, this limitation is inherent in any financial accounting research and it should not concern the majority of financial statements users. This limitation is minimized by studying the applicability and acceptability of the model for a large number of different companies, industries and financial statements users.
Moreover, it should be noted that the research process and outcome of this study is also an illustration of how general financial accounting theory should be developed based on CondNAR. In this way, the study does not only allow for generalizability to theory, but it also provides a description of a process to perform CondNAR. However, as this research has adopted a qualitative research strategy, the main criteria that should be particularly met is transferability. Transferability is generally ensured through an extensive description of the research process, but it may be limited in practice for some researchers because of limited access to relevant financial statements users groups. However, this does not limit the transferability of the study in general, but it limits it for some researchers subject to their access to financial statements users’ groups.

The latter issue also relates to the replicability of this study even though replicability is a criteria for quantitative research studies. Replicability is generally difficult to achieve due to the specific nature of qualitative research, but it is particularly difficult for this study as other researchers may have limited access to those financial statements users’ groups as chosen in this study as discussed above. However, the equivalent concept for replicability in qualitative research studies is dependability as described above. Dependability should allow other researchers to verify in all details what the researcher has done in the various steps of the research process. Even though this research may be difficult to replicate in an identical way, but the level of details about the research process should allow other researchers to verify in all details the research process adopted in and results of this study and re-perform the same study with other interwees. The previous sections and the chapters that follow should provide those details that allow other researchers to verify all details of this research study.

Finally, any research should be conducted in compliance with relevant ethical policies and requirements which consistent of a number of ethical principles that the researcher has to adhere to. Such principles establish communal discipline to be upheld by communities of researchers (Gomm, 2008). Those ethical principles do not strictly establish assessment criteria for the quality of research. They rather establish the minimum prerequisites for any acceptable research study independent of its quality (Gomm, 2008; Hoque, 2006). The University of Brighton has established
clear ethical policies. Adherence to them is ensured throughout the research program, i.e. an assessment was made at inception and afterwards on an annual basis within the research progress reviews. Potential ethical issues were discussed. For example, the disclosure of few company names were not commonly deemed as critical. Another example relates to the issue that intangible valuation of a company is naturally associated with a question of the value of individual employees. This was also discussed within the annual progress review meetings. In brief, this was not an issue for this study because there were at no point in time an intention to discuss and estimate the value of individual employees. Finally, another question arose as regards the disclosure of the names of companies around which the first case study was developed. It was concluded this was not a critical issue. First, all company representatives were asked for permission to disclosure the interview results as well as the related administrative details. Second, even where these names are stated, the interviewees cannot be matched to those companies they represented (CFOs) or to which they were exposed to (Banks, IFM, Auditors).

Apart from compliance with principles and requirements, Hoque (2006) adds that a clear outline of the research methodology is necessary to allow other researchers to assess potential critical ethical issues and how they were managed. This requirement was considered throughout the thesis. It also neatly links back the ethical issues to the general quality of research as discussed further above.

3.2.4 Research design

The research design provides a framework and guidelines for collecting and analysing data. It describes the connection between research strategies and methods for collecting and analysing the data (Denzin and Lincoln, 2005; Bryman, 2001). Several different approaches to research designs are proposed in the qualitative research literature. For example, Bryman (2001) proposes the following non-exhaustive list of approaches: experimental and related variations (e.g. quasi-experiments); cross-sectional design (most common form of which is social survey research); longitudinal design and its various forms (e.g. panel study and the cohort study); case study design; and comparative design. Creswell (2007) distinguishes
between narrative research, phenomenological research, grounded theory research, ethnographic research and case study. Holliday (2002) also proposes participatory action research and ethnomethodological research. Denzin and Lincoln (2005) indicate case study, phenomenological and ethnomethodological research, grounded theory as well as biographical, autoethnographic, historical, action and clinical research as alternative research designs. These approaches are not exclusive, may differ from author to author and can be difficult to distinguish (Creshwell, 2007). Their usefulness for a particular research depends on the research objectives.

This study applies a case study approach. In a case study, a bounded system, phenomenon or issue is explored in-depth in a natural complex setting through detailed, rich and in-depth data collection (Collis et al., 2009; Corbin et al., 2008; Creswell, 2007; Scapens, 2004; Holiday, 2002; Bryman, 2001; Stake, 1995). The term case study is also used if more than one case is explored (Creswell, 2007; Moses et al., 2007; Holland, 2006). The case in this study relates to the disclosure of intangibles related information to financial statements users.

A case study approach for this research is adopted as it has the advantage to develop in-depth descriptions and analysis of the needs and requirements of financial statements users as regards intangibles related information in published financial statements. It is regarded as the most suitable approach to achieve the research objectives as deep and rich knowledge from financial statements users is needed. Moreover, as this study contributes to the new research field of CondNAR, it is particularly useful because of the limited prior research in this field and that the case study approach allows rich insights into the new research field (Stoner et al., 2004; Scapens, 1990). However, the challenge with case studies is not only to define the case, but also the issue that data collection is typically extensive and less structured and therefore, the amount of information has to be diligently managed, i.e. reduced and analyzed. Data collection, reduction and analysis is discussed in the following sections.

This research study also shares some features of a (empirical) phenomenological approach (e.g. Creswell, 2007) where the phenomenon is the recognition and non-recognition of intangibles related information in financial statements even though such information is deemed to be decision relevant for financial statements users in
the literature. As explained, principles of grounded theory in its constructivist variant will also be considered for a systematic approach towards data collection and analysis for this research (Charmaz, 2005b; Creshwell, 2007). This is particularly the case in chapter 4, where a new IDF model is developed based on the empirical work and results from this chapter.

Therefore, the research design of this study is referred to as case study even though this study does not follow a strict and predefined research design. It is rather tailored to the needs to achieve the research objectives by using and adjusting different theoretical building blocks where needed.

After having elaborated on the selected research design, a research method (sometimes also several methods) has to be determined in order to establish the way data are collected.

3.2.4.1 Data collection

In this section, data collection is discussed in more detail in the context of this empirical research study to achieve the research objectives. A discussion on data analysis follows in the next section.

For data collection, semi-structured interviews were carried out in the first interviews with stakeholders. These offer interviewees freedom to express their points of view, but also provide a certain guidance and structure for the interviews themselves and the following analysis. Semi-structured interviews provide rich insights into the views of constituencies around intangibles disclosures in published financial statements (Creshwell, 2007; Elliot, 2007; Horton et al., 2004; Bryman, 2001). An interview guide is used to determine a certain order of questions and additional questions are only raised if needed to clarify responses from interviewees. This approach is more structured compared with the semi-structured approach described by Smith (2009). Such data collection is also similar to Gomm’s qualitative interviewing with open-end questions (Gomm, 2008). In carrying out interviews, Bryman (2001) suggests several criteria for a successful interviewer based on Kvale’s (1996) list of qualification criteria: knowledgeable, structuring,
clear, gentle, sensitive, open, steering, critical, remembering, interpreting, balanced and ethically sensitive. These criteria were taken into account for all interviews.

Compared with semi-structured interviews, unstructured interviews are not based on a predefined list of questions but rather focus on a set of prompts indicating the range of topics to be discussed. Related questions are open-ended; respondents are free to answer in detail if needed and the interviewer follows up with points that are deemed as relevant for him/her. There is usually no predefined set of questions (Smith, 2009; Corbin and Strauss, 2008; Fontana and Frey, 2005; Holliday, 2002; Bryman, 2001).

Structured interviews are more standardised, where any respondent is interviewed in the same context as others. Questions relating to structured interviews are usually specific and often provide only a fixed range of answers to facilitate comparative analysis. Such questions are often referred to as closed or closed-ended and the type of interview is often associated with self-completion questionnaires (Smith, 2009; Gomm, 2008; Fontana and Frey, 2005; Bryman, 2001). Structured questionnaires were used in a later stage of the research project to follow up with the first set of interviews, as they allow examining specific issues and concepts of a study.

As indicated above, semi-structured interviews were carried out at this stage of this study. They allow a structured way to address the key themes (O’Dwyer, 2004; Scapens, 2004) and to discuss similar issues and themes with different interviewees while they remain open and flexible enough to obtain rich insights into the knowledge and views of financial statements users, which is one of the main purposes of the interviews. The flexibility also allows to identify and explore further themes and to follow up with responses given by the interviewees. Whereas themes emerge in the course of unstructured interviews, with semi-structured interviews related to propositions discussed in chapter 2, most of the themes are already identified before the interviews take place. However, those themes are not necessarily exhaustive at inception, i.e. additional themes could emerge in the course of each interview as semi-structured interviews give sufficient freedom to the interviewees to express additional ideas or themes from the researcher’s point of view. In this study, themes were identified through propositions discussed in chapter 2. However, additional themes were identified in the course of the interviews leading to follow-up activities which are discussed in the chapters that follow.
All questions in the semi-structured interview guide were linked to the proposed propositions. Although validating propositions and relating theory is rather oriented towards a deductive research strategy, which is usually associated with quantitative research studies (Holliday, 2002; Bryman, 2001), the aim of this study was also to generate relevant theory from the interviews. As explained in the previous chapter as well as in section 3.1, the underlying theory of intangibles disclosure in published financial statements is often widely spread, while specific as well as commonly accepted theory does not exist at this stage. Therefore, propositions were raised in the previous chapter to understand the views of interviewees in respect to the different issues and to validate the theory. The propositions also shape the themes, which are discussed in chapter 4. However, the responses were further used to develop new themes and theory.

Some suggestions are provided in the literature regarding the preparation and use of an interview guide for semi-structured interviews (Smith, 2009; Creswell, 2007; Bryman, 2001):

- Creation of an order for the topics and questions
- Formulation of research questions to help in answering the research questions
- Using language that is comprehensible and relevant to interviewees
- Avoiding questions that might be too demanding for interviewees
- Emphasising confidentiality and anonymity
- Making interviewees aware how and why they have been chosen
- Ensuring clear identification of interviewees

In carrying out interviews, Bryman (2001) suggests several criteria for a successful interviewer based on Kvale’s (1996) list of qualification criteria: knowledgeable, structuring, clear, gentle, sensitive, open, steering, critical, remembering, interpreting, balanced and ethically sensitive. These criteria were taken into account for all interviews.

To meet the research objectives, questions were prepared for the semi-structured interviews based on the guidelines stated above. Interviewees were IFMs, CFOs, credit officers as representatives of banks responsible for lending decisions and auditors. They all worked in or were concerned to the high-tech industry, especially
the biotech industry. The reasons for this selection were explained in section 2.5. In summary, they were chosen as representatives of groups who use and are concerned with information in financial statements, as published by stock-listed biotech companies. Biotech companies were chosen as the biotech industry is characterised as highly knowledge driven and therefore, it is one of the industries that is most concerned by accounting for intangibles in published financial statements (see section 2.4).

Note, in the interview guide the term intangibles was replaced by the term knowledge. As discussed in the previous chapter, the term ‘intangibles’ is considered to be similar to the term ‘knowledge’ in its holistic view and complexity. Therefore, the term ‘intangibles’ is used throughout this thesis, as confusion is not expected with the official accounting term ‘intangible assets’, which is defined in a much narrower sense (see section 2.1). However, to avoid confusion, the term knowledge was used for the interviews. Respondents were also asked to provide a brief description of their understanding of the term ‘knowledge’ in order to ensure that ‘knowledge’ is regarded in general as non-physical assets. The interview questions and their related propositions relevant for this part of the research are summarised next.

**P1: Constituencies have a different understanding about the meaning of knowledge among each other and compared with the literature.**

- What is the meaning of knowledge relating to biotech companies as you have used it before?
- Could you define knowledge in relation to biotech companies in one sentence?

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61 Proposition 6, which supplements proposition 4, and its related questions are stated and used in section 2.2.2.

62 Refer to chapter 2 for a detailed discussion relating to the propositions and to Appendix I for a more detailed explanation of the related questions. A summary of all propositions and related questions is also provided in Appendix I.
P2: Financial statements no longer fulfil their original purpose.

- What do you think is the principal purpose of financial statements?
- What is the purpose of financial statements for you?

P3: Constituencies have a different understanding about reliability with regard to information within financial statements.

- What is the meaning of reliability for you in relation to reporting and valuing knowledge?

P4: Constituencies already recognise, outside the financial statements and in different manners, the knowledge value within a company.

- How do you identify (manage) and evaluate knowledge in a (your) company?

P5: Constituencies do not require that information in financial statements including information about knowledge is in accordance with the general financial accounting framework.

- Please rank (by ticking) each of the following from 1 (very important) to 5 (not important):

  For the reliability of information and data in financial statements, how significant is for you …

  1) verifiability of these data and information  1 2 3 4 5
  2) representation faithfulness of these data and information  1 2 3 4 5
  3) neutrality of these data and information  1 2 3 4 5
  4) comparability of these data and information  1 2 3 4 5
  5) consistency of these data and information  1 2 3 4 5

93
P7: Constituencies find it useful and do want to see the valuing and reporting of knowledge in financial statements.

- What do you think about the reporting of “knowledge” in the financial statements of biotech companies?
- Would it be (decision-) useful – from your point of view – to publish information about “knowledge” in the biotech companies in financial statements?
- Why would information about knowledge be useful/not useful from your point of view?
- Do you think reporting and valuing knowledge would be considered to be useful by other constituencies (banks, investors, entrepreneurs)?
- Imagine knowledge could be valued and reported reliably in financial statements (i.e. in a perfect world), would they be more useful from your point of view and why?
- Do you think financial statements would be considered to be more useful by other constituencies if knowledge could be valued and reported reliably?

P8: Constituencies do recognise the main characteristics in the biotech industry, although they are not valued and appropriately reported in financial statements.

- What do you think are the main characteristics of the biotech industry (e.g. compared with the oil or steel industry)?
- What are the main value drivers of biotech companies?

P9: Constituencies do need more and different information that than in financial statements to make better decisions.
What do you think has to be changed in the financial statements of biotech companies, i.e. included or not included, so that they fulfil their principal purpose?

What do you think has to be changed in the financial statements of biotech companies so that you can better make decisions based on them?

3.2.4.2 Sample selection and entering the field

Four main groups of stakeholders/constituencies, i.e. groups having an interest in stock-listed biotech companies, were interviewed to understand in detail their views on current financial statements, on the usefulness of financial statements for decision-makers and on whether intangibles disclosures had to be improved to enhance the usefulness of financial statements.

These four groups were IFMs, credit officers as representatives of banks responsible for lending decisions, chief financial officers (CFOs) of companies and auditors consisting of 24 experts in this field and users of the financial statements of stock-listed biotech companies. Apart from CFOs, the other three groups of constituencies were also experts and users of financial statements in companies from other industries including, but not limited to, other high-tech industries such as the laser and IT industries as well as larger companies from the chemical industry.

The reasons for the choice of the four main groups of constituencies were as follows. IFMs were selected as they directly provide capital to a company against ownership rights and therefore might be interested in any kind of information that is relevant to a company’s value such as non-financial data as well as profit and performance indicators (e.g. Tan and Lim, 2008; Trueman et al., 2000). As explained in section 3.1., they are different to financial analysts as they execute investments and directly bear the risk of losses.

63 Constituencies are defined here as people having an interest in something, i.e. in commercial companies. They comprise a variety of parties such as investors, employees, lenders, suppliers and other trade creditors, customers, employees, auditors, governments and their agencies and the public. The interests of these parties might be different. However, they use financial statements in order to satisfy some of their different needs for information (IASB (2010), para. 9).

64 Refer to section 2.5 for more details on why the biotech industry was selected.
Credit officers of banks are in charge of the lending process and approve loan applications by companies (Ousama et al., 2011). They provide loans or other credit facilities without becoming an owner of a company and they expect that companies pay according to the contractual payment schedule including the principal at maturity. The primary concern of banks is that a company becomes unable to pay in the future according to the agreed payment schedules and that they do not receive back the principal outstanding amount, no matter whether directly or indirectly through guarantees or collaterals. Therefore, banks might be interested in any kind of information that provides insights into a company’s future ability to pay according to the contractual loan agreement in order to reasonably estimate the probability of default and the expected loss a bank is exposed to. The assessment helps in deciding whether to grant credit or not and if so to determine the contractual provisions for this credit (Guimón, 2005).

Chief Financial Officers (CFOs) were selected as representatives of those companies responsible for the financial situations of companies, but also as persons with a personal stake in them. Companies use financial statements as a formalised instrument to inform interested third parties about their financial situations and to attract new investors. They are also personally concerned, as their personal performance is often dependent on the performance of the company they work for.

The least intuitive constituents are auditors. Auditors are bound by professional standards. They should express an opinion, based on their audits, as to whether financial statements are prepared, in all material respects, in accordance with the applicable financial reporting framework (IFAC ISA 200.2). They are an independent party that stands between fund managers and banks on one side and companies on the other, although they are hired65 and paid by the companies (Rosenthal, 2011). However, auditors do not only have a contractual obligation to their clients, but they face a de facto obligation to non-clients in many jurisdictions where the public scrutinizes the auditors’ work without any contractual relationship, likely because the main beneficiaries of the audits are non-client third parties (Rosenthal, 2011; Grubbs et al., 2007). This particular situation exposes them to

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65 In most cases nowadays, by the audit committee.
negligence claims from third parties in case of malpractice⁶⁶ (Reffett et al., 2012; Rosenthal, 2011; Grubbs et al., 2007). Such negligence claims strongly depend on the specific laws in each country, in principle and in the amount - i.e. if a negligence claim is possible, the liability could be either capped or unlimited, potentially leading to the bankruptcy even of an audit firm (Rosenthal, 2011; Doralt et al., 2008). Consequently, auditors are very much interested in managing and limiting their audit risk - i.e. the risk of incorrect opinions (Grenier et al., 2012). On the other hand auditors gain privileged insights into financial information of companies through their audit engagements before such information is released to the public. They may trade-off between doing the right thing and protecting themselves against using the insider information and being exposed to claims. This is an economic issue, but also an ethical issue for each auditor. Auditors might disfavour any information recognized in financial statements that increases the risk of auditors failing to achieve their objectives. However, as auditors also have unique insights into the companies they audit, they may be able to reasonably assess, based on this deep client understanding in addition to their accounting knowledge, whether financial statements adequately reflect the financial position of a company. That specialised knowledge as well as their view from a third party perspective means that auditors can provide valuable insights into the research problem of whether information about intangibles could increase the usefulness of current financial statements.

Figure 3.3 provides a general overview of the major stakeholders and their related interests in a commercial company separated into internal and external stakeholders (those selected for this study are shaded green).

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⁶⁶ Malpractice is the most common reason for negligence claims, as negligence claims arise often when an investor has incurred a material loss - e.g. in many cases because of a bankruptcy on investment because of their reliance on misleading or erroneous financial statements (Grubbs et al., 2007). However, other incidents and events such as insider trading by auditors may result in negligence claims, but those claims may also be directed against the respective audit partner and not against the audit firm (Fuller, 2014; Singh, 2013).
The interviewees are selected as follows: First, a list of relevant biotech companies has been developed. According to the internet information platform “biotechnologie.de”\textsuperscript{67}, the total number of biotech companies registered in Germany in 2003 were between 350 and 490, depending on the definition and whether companies with biotechnology as minor part of their business activities are taken into account (http://www.biotechnologie.de/bio/generator/Navigation/Deutsch/Daten-und-Fakten/statistiken,did=18076.html?listBId=2230). The majority are not listed on a stock exchange.

In 2003, out of 50 listed companies in the so called neuer Markt (NEMAX), 10 were biotech companies. They have been identified through the German biotech association (http://www.v-b-u.org/Mitglieder/Unsere+Mitglieder.html) and the information provided on their websites as regards business objectives, strategies and activities (weblinks are provided on the webpage of the German biotech association). All have been contacted and asked for an interview, but only 4 (Medigene, Lion

\textsuperscript{67} Biotechnologie.de is an initiative from the German Federal Ministry of Education and Research
Bioscience, Sartorius, Evotec) have replied positively and have accepted an interview.

Following the first selection process, 29 AGs\(^68\) and 1 SA were identified at [http://www.v-b-u.org/Mitglieder/Unsere+Mitglieder.html](http://www.v-b-u.org/Mitglieder/Unsere+Mitglieder.html). Except for one (Evotec), all others identified above were included in this list as well. Unfortunately, not all of these 30 (AGs and SA) were stock listed, even though they were incorporated as PLC with transferable stocks. Finally, 17 were listed (out of the total number of 31, i.e. 30 + Evotec), of which 2 were excluded as they are large PLCs with only biotech as small part of their business (Bayer Healthcare AG and Novartis Pharma AG). Therefore, 15 companies remained relevant for this study at this stage.

According to biotechnologie.de, there were 9 stock listed biotech companies in Germany, including Medigene, Lion Bioscience and Evotec. The companies Stratec, Cybio and Sartorius were not included in this list (but included in the sample), but which were included in the list of the German biotechnology association [http://www.biotechnologie.de/BIO/Navigation/DE/Hintergrund/studien-statistiken.did=35314.html](http://www.biotechnologie.de/BIO/Navigation/DE/Hintergrund/studien-statistiken.did=35314.html) above (and therefore, are included in the list of the 17 stock listed biotechnology companies). They were added to the above list of 9 resulting in a total number of 12. Three further companies were not included in this list. The reason for the difference of these 5 companies is not very clear, but it can only be caused by different definitions and consequently, different compositions of the classes of biotechnology companies. This is also shown by the lists of biotechnology companies as provided by biotechnologie.de and the company Ernst & Young which also differs from the others.

According to the European Biotechnology News (03/2006) and biotechnologie.de, 17 biotechnology companies are exchange listed in Germany. The total number matches to the number identified above. Therefore, the starting point were the 15 identified companies, of which 10 are listed in the NEMAX as stated above. The remaining were listed in other standards as provided by the Germany stock exchange Deutsche

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\(^{68}\) AG is the German, S.A. is the French equivalent to the legal form of the UK PLC (Public Limited Company)
Börse Group in Frankfurt. The remaining 5 were also contacted and finally the two companies Stratec (until March 2003 in SDAX, later in TechDax; in between listed, but not part of an Index composite) and Cybio (listed in the general standard of Deutsche Börse Group, not part of an index) also confirmed their participation. In total, 15 CFOs of companies as identified above were contacted for an interview. This phase started on 11 August 2003. 6 CFOs finally agreed with an interview.

Following the identification of the companies and their respective CFOs, banks, IFMs and auditors who had business relationships with the sample companies were identified.

Banks that were engaged in credits with the companies above were found through the annual reports of the companies and other publicly available information (e.g. ad-hoc publications, management representations) provided by the companies identified above. In total, 13 banks were initially identified. After having identified these banks, they were contacted and asked to connect the researcher with the person in charge for corporate lending, particularly for biotech companies if they make a distinction within the organization of the bank. Following several email exchanges, some banks have rejected to participate in an interview, some others connected the researcher with the person in charge who was willing to give an interview. In total, interviews with 6 representatives of banks were agreed.

Investment fund managers trading with the stock listed biotech companies as identified above were found through “google” research. First, relevant investment funds were searched for. Search terms included “high tech”, “high yield”, “growth”, “small cap equity Europe”, “high growth Europe”, “biotech” and “technology”. Large investment promoter groups were also identified separately (e.g. Deka, Investec, etc.) and their webpage were screened to identify promoted investment funds investing in the biotech companies as stated above. Investment funds found that met those search criteria were searched in more detail as regards its portfolio composition. For each of these investment funds, latest publicly available portfolio composition as presented in the year-end or quarterly reports were reviewed in order to identify those companies already identified above. In total, 22 IFMs were identified as managers of portfolios in which at least one of the companies above are hold. They were contacted by email or contact forms available on their respective
websites. Some rejected, some others had not responded at all. The latter were kindly reminded after about two weeks to provide feedback. Finally, 6 IFMs agreed for an interview.

Finding auditors was the most straightforward task. The annual reports of the 15 companies initially identified were used to identify relevant auditors as in most cases they were named in those reports. Note, in the German audit reports, two certified accountants generally have to sign them. The majority of identified auditors from these 15 companies came from the same audit firm as the researcher worked for. As a first step, the auditors of the companies for which the 6 CFOs came from were contacted and asked for an interview. In total, 12 auditors were contacted at this stage, i.e. for each of the 6 companies, two auditors were contacted. It was explained to them that only one of them was asked to give an interview. As neither of the two auditors of one of these companies wanted to participate, another auditor from the ‘reserve sample’ (i.e. the other auditors from the remaining 9 companies) who was willing to participate from one of the other stock listed biotech companies was selected. In total, 13 auditors were contacted (12 related to the companies from which the selected 6 CFOs came from and one auditor in charge for the audit of one of the other 9 companies) and 6 auditors (one of two related to 5 of the 6 companies identified above and another auditor from the ‘reserve sample’) agreed to give an interview.

The reasons for selecting these interviewees are multi-fold. First, the approach was to identify a group of financial statements users around the same companies so that their views are less influenced by the different characteristics of the different biotech companies. This is also the reason to focus on biotech at this stage. However, all interviewees from the groups of IFMs, auditors and banks are also exposed to other high-tech industries dealing with, for example, high-tech laser, specialist machines for other production process such as the automotive industry, computer hardware and specialist computer software.

Furthermore, the PAT literature has focused mainly on stock exchange listed high-tech companies. Selecting also stock exchange listed companies may make a comparison between the findings from the APT literature and the findings from this
study more useful. Moreover, the process of identification of the interviewees is significantly eased as it had been much more difficult and maybe impossible to obtain the same degree of information for non-publicly traded companies.

Overall, interviews with 6 CFOs, 6 IFMs, 6 banks and 6 auditors were carried out. Those interviewees were either native German or English speakers. Interviewees from companies and banks were based in Germany and were native German speakers. IFMs were located in Germany and the UK. However, most were native German speakers. Two auditors were US citizens and therefore native English speakers, while the remaining were German; both US auditors were based in Germany as the ultimate parents of the companies identified for this study were based in Germany (or had double registration in Germany and the UK).

Generally, access to decision-maker groups in business is generally regarded as very difficult (e.g. Bedard and Gendron, 2004). However, this was not a particular issue for this case study even though one additional auditor had to be added that had no direct business relationship with the companies from that CFOs are interviewed, but this auditor had close business relationship with one of the other stock listed biotech companies identified above. One of the reasons why it was not a particular issue might be that each query were made by email in which the background of the study as well as of the researcher - as practising auditor - was described. Another reason could have been that all possible interviewees were contacted by personal name (except for most of the banks as those had to be asked first for the names of the names of the relevant persons in charge) and not anonymously, which might have increased their commitment. It is worth mentioning that IFMs are responsible for a larger portfolio of similar investments that are often from different industries and different regions. For example, one IFM was responsible for a fund that held an equity investment in a company of which the CFO was interviewed, but the fund also had investments in small and medium-sized stock-listed enterprises from the laser and computer industry, which were located in the US, the UK, Australia and elsewhere in the world. Some of the other IFMs were managers of larger portfolios in which the investment share in one of the companies identified for this study was rather a small portion of the whole portfolio composition as the fund had also held investments in larger stock-listed companies from the chemical and machinery industries.
Figure 3.4 summarises the idea behind the interviewees selection approach adopted for this research study.

![Diagram of interviewees groups]

Figure 3.6: Groups of interviewees for this research study

In summary, interviews with CFOs from the following companies were arranged:

- Medigene
  
  [http://www.medigene.de/englisch/index_e.php](http://www.medigene.de/englisch/index_e.php)

- Lion bioscience (since 28 Nov 06: SYGNIS Pharma AG)
  
  [http://www.sygnis.de/investoren/kennzahlen](http://www.sygnis.de/investoren/kennzahlen)

- Stratec Biomedical Systems AG
  

- Cybio AG
  

- Sartorius AG
  

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69 The websites of these companies were last visited in December 2006.
Finally, six interviews from each group of constituencies were carried out. In particular, the number of possible interviewees was already limited and accessing those decision-maker groups in business is generally regarded as very difficult (e.g. Bedard and Gendron, 2004).

All interviews were set up as telephone interviews, and they took place between 19 August 2003 and 9 March 2004, lasting between 40 and 60 minutes. Whether to tape semi-structured interviews is dependent on several determinants such as the nature of the research topic, willingness of the interviewee to be taped, interviewer’s preference and competence with one of these techniques and the benefits and drawbacks of the techniques themselves (Hayes and Mattimoe, 2004). For example, Stoner and Holland (2004) and Horten et al. (2004) did not generally use tape recorders for their interviews.

As suggested by Holliday (2002), Bryman (2001), Moll et al. (2010) and Elliot (2007), and as all interviewees agreed to tape recording, all interviews were taped using a digital recording device, transcribed and, where necessary, translated into English generally within two weeks of the respective interview. As differences between cultures and countries might have an impact on responses (Xian, 2008), questions were asked to interviewees in their native language, even though “neutral”, i.e. non-culture-related questions, might be allowed in English language questionnaires without deteriorating the results assuming the interviewees are fluent in English (Harzing, 2004).

Telephone interviews were chosen in contrast to face-to-face interviews, as they are cheaper, easier to administer and to supervise and are not affected by the interviewer as a person, e.g. through appearances and gestures (Gomm, 2008; Creswell, 2007; Bryman, 2001). They might also increase the likelihood that information is disclosed through the greater distance between interviewer and respondent (Gomm, 2008). A disadvantage is that an interviewee cannot be shown something while the interview takes place. The benefits outweigh the disadvantages, however.
3.2.4.3 Method of data analysis

3.2.4.3.1 Data analysis in qualitative research studies

In qualitative research studies, there are many names for different approaches. Unlike quantitative data analysis, no clear-cut rules have been developed about how qualitative data analysis should be carried out (Denzin et al., 2005; Bryman, 2001). Creswell (2007) explains that data analysis in qualitative research consists of a few main activities that all approaches have in common: preparing and organising data for analysis, reducing data into themes through a process of coding and condensing the codes and finally representing the relevant data in a particular output format such as figures and tables or more generally in a discussion. Huberman et al. (1994) suggest three similar main activities: data reduction, data display and conclusion drawing. Instead of conclusion drawing, O’Dwyer (2004) suggests data interpretation. Apart from those key principles in the process of data analysis in qualitative research, Gomm (2008) suggests three different ways of analysing data in qualitative research: (1) analysing interviews as reports on the status of affairs, whether corrigible or incorrigible, (2) thematical analysis and (3) linguistic analysis. Bryman (2001) proposes two other approaches: analytic induction and grounded theory. Gurd (2008) distinguishes only between grounded theory and other forms of qualitative enquiry. Grounded theory is used in various forms (Smith, 2009; Bryman, 2001), although it can generally be classified into two fundamentally different approaches: constructivist and positivist-objectivist approaches (Charmaz, 2005a; Denzin and Lincoln, 2005).

In this study, a thematical analysis approach as a general analytical procedure for qualitative data analysis is chosen. It considers the following key process steps based on the activities suggested above: preparing and organising the data for analysis; structuring and reducing data into themes through the process of structuring/ coding; presenting relevant data in a particular output format; interpreting and drawing conclusions from them. Thematical analysis is chosen in this study as it allows to analyse the data from interviews in a structured way while giving sufficient flexibility along a thematical structure to adapt to the needs of this research study with its particular research objectives.
This first part of the study is mainly based on the key themes developed through the propositions raised in chapter 2. Hence, the general structure is given by them. However, it also became obvious during the interviews and analysis of the interview transcripts that another key theme emerged: the need for a new intangible disclosure framework model, which specifically responds to the needs and requirements of financial statements users and financial accounting standards setters. Therefore, the transcribed interviews were re-analysed in light of the components that financial statements users would wish to see in an enhanced intangibles disclosure framework model. Those components were identified and marked (coded) as described in the following sections. They were then extracted from the interview transcript for further analysis. Details relating to the coding procedure and the data display is described in the following section.

3.2.4.3.2 Coding procedure

Coding is often one of the most important activities in empirical research. It gives names and labels to the specific parts of the interview transcripts that are or could be of theoretical interest; it also groups/organises the raw data with which the researcher is working (Corbin and Strauss, 2008; Creswell, 2007; Charmaz, 2005a; O-Dwyner, 2004; Bryman, 2001). Coding in qualitative data analysis is somewhat different to that in quantitative data analysis. In qualitative data analysis, coding tends to be more tentative, i.e. it is subject to potential revisions, whereas in quantitative data analysis coding seems to be fixed. In qualitative data analysis, data are treated as potential indicators of concepts and each indicator is thoroughly and constantly compared with the different concepts that exist or might arise (Bryman, 2001; Strauss, 1987).
Three types of coding practices are mainly known (Creswell, 2007; Bryman, 2001; Strauss and Corbin, 1990): open coding, axial coding and selective coding. Open coding refers to the process of breaking down, examining, comparing and categorising of raw data, which are grouped later to themes (Creswell, 2007; ODwyer, 2004; Bryman, 2001; Strauss and Corbin, 1990). These three types of coding practices are most commonly used in grounded theory based approaches. Otherwise, the use of one of these types of coding is subject to the suitability for a particular research method.

The first part of the research study uses open coding even though the majority of data collected are already segmented through the different propositions and semi-structured questions. However, one new key theme emerged during the analysis of the interview transcripts that required additional coding: the need for a new intangibles disclosure framework model, which specifically responds to the needs and requirements of financial statements users and financial accounting standards setters. Hence, the interview transcripts were re-analysed across all the different questions and related answers to identify relevant components (which could be referred to as sub-themes relating to this new key theme) for such a new model. The previous themes and codes are not changed or put in a new order and therefore, this is achieved by an additional open coding procedure.

The following coding procedure was applied in the research study. Interviews were carried out with every interviewee as described above. They were tape-recorded and

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70 Axial coding means related concepts derived from open coding to each other (Corbin and Strauss, 2008). More particularly, the researcher reassembles the data that were structured by open coding in a first step in new ways. New connections are made between the categories that emerged out of open coding. This is mainly carried out by
- identifying central phenomena or findings (concepts and categories),
- exploring causal conditions,
- specifying the actions or interactions resulting from the central phenomena or findings,
- identifying the conditions that influence the actions and interactions as specified above, and
- delineating the outcomes.

In short, it means linking codes, concepts and categories to contexts and to central phenomena, to patterns of interaction and causes as well as to consequences (Creswell, 2007; Bryman, 2001; Strauss and Corbin, 1990).

71 Selective coding is less widely used, at least as a term and as an explicit procedure. It refers to identifying the core categories that are put as central issues under which all other categories are subsumed. It is called a storyline, sometimes appearing as a proposition of predicted relationships that connect the different categories subsumed under a core category (Corbin and Strauss, 2008; Creswell, 2007; Bryman, 2001; Strauss and Corbin, 1990).
transcribed. In the first stage, no translation was made for interviews carried out in German. All interviews were copied into Microsoft Excel. For each question, one line was used, i.e. in one dimension, all questions were listed. In the second dimension, i.e. in the rows, interviewees were listed. The result was a two-dimensional matrix that includes all responses next to each other on every question. The aim was to compare the responses for each question. Table 3.3 is an extract of the Excel sheet.

<table>
<thead>
<tr>
<th>Questions</th>
<th>C1</th>
<th>C2</th>
<th>…</th>
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<tr>
<td>Q_1.1: What do you think is the principal purpose of financial statements?</td>
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</table>

Table 3.3: Extract of Excel sheet used to documented interviewees’ responses

Interviewees are anonymised by the use of C1, C2, etc.: “C” stands for company representatives, i.e. CFOs, “F” for IFMs, “B” for credit officers of banks and “A” for auditors (see also above). Each abbreviation is unambiguously linked to a participant identity.

The whole Excel sheet was printed out so that a comparison could be made on paper. For each question, every response was analysed. The first step in this analysis was to read the answers and to mark the most important features of the answers that directly related to the propositions. Those marked words were regarded as the keywords that summarised the responses. They were then used to code the whole interview.

After the first analysis, the different responses of interviewees for each question were compared again at a higher level. This means that all interviews were read again to compare the answers at a higher level of detail. The purpose was to understand the general differences in the answers as well as the different approaches of interviewees’ responses to different questions and to ensure, as a control, that no important information had been forgotten. It was not assumed that the detailed features were inadequately identified in the single analysis; rather the purpose was to
identify aspects that might have appeared as not relevant, but became effectively relevant when the different interviews were compared.

Table 3.4 provides an example of this procedure. Question Q_1.2 and interviewee F1 are chosen. Note: that the text has already been translated into English and the marks are made in Excel by underscores.

<table>
<thead>
<tr>
<th>Question</th>
<th>F1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q_1.2: What is the purpose of financial statements for you?</td>
<td>To verify if the information obtained through the presentations of the companies, so called “one-ones” are compared with disclosed figures. The “one-ones” are presentations of companies, where companies say something about their overall situation, their development, which strategy they have, which objectives they have and we document then this information in order to compare them with the later submitted disclosed figures.</td>
</tr>
</tbody>
</table>

Table 3.4: Illustration of documentation procedure for interviews

The second, comparative analysis of the interview transcripts also revealed the need of a new key theme in addition to the key themes developed through the propositions in chapter 2. This theme refers to the need for a new intangibles disclosure framework model that specifically responds to the needs and requirements of financial statements users and financial accounting standards setters. The related sub-themes and codes for this new key theme were developed separately from the previous coding, i.e. a new excel working sheet was printed out without any notes and marks and reanalysed in terms of components relevant for such a new model. Based on this procedure, interviews were well structured and could be further analysed in a structured and detailed manner.
3.2.4.3.3 Data management

All interviews were tape-recorded. The tapes were labelled with the name of interviewee, date and time and length of interviews. They were archived together with the email exchange with all interview candidates and non-participants.

All tapes were transcribed in their original language in Microsoft Excel. Excel is used to facilitate the comparison and analysis of data. The Excel files were archived twice on the researcher’s own hard drive and on a USB stick. The USB stick was filed with the other documents.

3.3 Results and discussion of interviews

Section 3.3 provides the results from and discussions on the interviews described in section 3.2.

3.3.1 The purpose of financial statements

P2: Financial statements no longer fulfil their original purpose.

Interviewees provided very similar answers to the question of the principal purpose of financial statements.

Financial statements are a tool, based on legal requirements, to provide any interested person/stakeholder with sufficient financial and non-financial information about the company. It should provide stakeholders sufficient information to assess the company for their purposes. This is exemplified by the following answer of C3:

Extract 3.1 (Q_1.1; C3)

Q_1.1: “What do you think is the principal purpose of financial statements?”

C3: “Financial statements have a legal background: they are the basis for the annual report. The annual report is used as a communication and assessment
tool for the addressees of [name of company]. These are primarily investors, but also customers and external suppliers.”

Banks use financial statements as an information source about a company, namely as a medium that provides financial and non-financial data on a company in order to assess its creditworthiness. Bank B1 explained how it uses financial statements:

**Extract 3.2 (Q_1.2; B1)**

**Q_1.2**: “What is the purpose of financial statements for you?”

**B1**: “Credit assessment and controlling, insights into the company, firm planning, business development and the future development of the company depending on the scope of the financial statements.”

Bank B5 added that financial statements form the starting point for a credit assessment. B2 referred to the reliability of such statements, as they have to be audited – at least for stock-listed companies.

Fund managers F1, F3, F4 and F5 use financial statements as a tool to gain initial information about a company, a kind of first screening to come up with a first set of possible companies in which they could invest. Fund manager F6 uses financial statements as one part of other information for the first selection.

Fund managers F1, F2, F4 and F5 use financial statements as confirmatory references: they provide confirmation on financial and non-financial information such as historical financial information and budgeted costs and revenues from past periods, which they have already received from the companies, e.g. through so-called “one-to-one” meetings or from third party estimates. As Fund manager F1 explained after an additional question from the interviewer:

**Extract 3.3 (Q_1.2; F1)**

**Q_1.2**: “What are one-to-ones?”

**F1**: “Those are company presentations. Companies represent themselves and talk about how good or bad they perform, which strategies they
have, which objectives they have. You document those one-to-ones and verify them afterwards with the delivered audited figures.”

Fund managers F3 and F6 did not explicitly state that this is also a purpose of the financial statements. Only F3 explained that he does not use financial statements if he has already received the same information from different sources:

**Extract 3.4 (Q_1.2; F3)**

**Q_1.2:** “What is the purpose of financial statements for you?”

**F3:** “…the annual report provides me a structure of the company. For example, when I receive the figures for the fourth quarter, in most cases through email, etc., somehow a short message, that is sufficient for me. The financial statements are not considered anymore then.”

It might be that F3 does not distinguish between audited and non-audited financial information or underestimate potential mistakes within non-audited financial information.

**In summary, almost all fund managers use financial statements as a part of a range of different information for first selection and screening. This is consistent with the results in the literature as described in section 2.2.1.1 (see also Bouwman et al., 1987).**

Financial statements are deemed as a useful but incomplete information source by users. They do not use them as a main part of their selection and decision processes. Only one fund manager explained that he does not use financial statements at all, as he receives that kind of information from other reliable sources. Therefore, it can be argued that financial statements provide decision-relevant information, but lack much information that is relevant to estimate the value of a reporting entity. Hence, they do not fully achieve the objectives as stated by accounting standards setters such as the IASB (refer to section 2.2.1.1); they lose relevance in this respect. This also confirms what the value relevance literature often claims, namely that financial statements are less useful as they do not provide decision-useful information. However, the results do not confirm the
view of some authors in the value relevance literature who claim that financial statements are no longer useful (refer to section 2.2.1.1), which is disapproved by the findings here.

The results confirm the preliminary view of the author that financial statements lack useful information, but they are still decision-useful. As a consequence, they should be enhanced. This research investigated further whether an enhanced IDF model could contribute to the required enhancement and what this should look like.

3.3.2 Value drivers of biotech companies

**P8: Constituencies do recognise the main characteristics in the biotech industry, although they are not valued and appropriately reported in financial statements.**

In terms of the main characteristics of the biotech industry, the companies discussed high initial investments, high losses, primarily research activities, few products in the R&D phase, highly qualified and specialised people and uncertainty about product realisation. As the CFO of Company C1 put it:

**Extract 3.5 (Q_2.1.1; C1)**

**Q_2.1.1:**"What do you think are the main characteristics of the biotech industry (e.g. compared to oil or steel industry)"

**C1:** “Oh, if I think about us I would say: high initial investments and initial losses, much research and development activities, risk in the product realization. I think, it is also characterized by flexible small companies who are specialized on a limited number of activities and products”

The CFO of company C3 added “high dependence on few large investors and customers”. C5 distinguished between young and already established companies. The main activity of young companies is in the research field, whereas for more mature
companies the main activity lays in the development of products. He summarised the
characteristics of the biotech industry as “innovative with specialised know-how that
is not yet ready for the market or that has just achieved readiness”. C6 stated that in
biotech companies few tangible assets are used in the operation of the business.

**In summary, the findings show that companies in the biotech industry are
associated by interviewees with high initial investments, initial losses, significant
R&D activities, owning few tangibles, but many non-tangible assets, risky product
development, very specific and a limited number of products and services. They
tend to be smaller in size.**

Based on these characteristics, some elements help explain the value drivers of
biotech companies: intangible assets, significant R&D activities and specific
products. To specify this preliminary and general view, interviewees were asked
about the main value drivers of biotech companies. For example, focus on revenues
is indicated, but what drives the revenues?

According to all companies, it is the unique combination of many different parts:
patents, knowledge of employees, research results, customer relationships,
uniqueness of products and ideas in the research phase, own procedures and a lot
more as they state. All elements from the value chain are considered to be important.
As Company C6 described it in a comprehensive way:

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**Extract 3.7 (Q_2.1.2; C6)**

**Q_2.1.2:** “What are the main value drivers of biotech companies?”

**C6:** “Those are almost all factors which are included in the value-added chain,
as they are all very important. If one of those were missing, the value chain
would collapse. Those factors comprise certainly the knowledge of our
employees, our capability to create new knowledge within our organization,
the processes which we know to develop new products, the licenses we own
and our customer relationships with which we can transform our value to
the value of our customer.”

Company C4 added to this:
**Extract 3.8 (Q_2.1.2; C6)**

**Q_2.1.2:** “What are the main value drivers of biotech companies?”

**C6:** “I would, even if they are not direct value drivers, add to the list of our value drivers our investors and to a certain extent also our banks. Because of their support we are only able to finance specific projects and therefore they are indirectly value drivers through the fact that they are means of existence for the other value drivers.”

Few of these single value drivers are shown in current financial statements. The combination of these is even hidden for financial statement readers. Banks generally confirm this view on value drivers, although they are less specific, such as B1:

**Extract 3.9 (Q_2.1.2; B1)**

**Q_2.1.2:** “What are the main value drivers of biotech companies?”

**B1:** “The research and development results certainly. If the company already sells products or services, certainly those as well. But for most of the biotech companies, the main value driver is the potential within the company being able to produce a successful product from research and development activities.”

This response from B1 also reflects the uncertainty of third parties about a biotech company’s development and success. There is something intangible, about which the companies are very well aware and which is used by them to create such added value. However, this “something” is neither explicitly nor implicitly considered in the financial statements, except through realised revenues when the potential has been materialised at the end of the added-value process and when sold to market. Further, even banks do not obtain a full understanding of the particular knowledge of a biotech company’s value drivers and particularly not to the same degree of depth as the company itself. This finding is consistent with the value relevance literature discussed in section 2.5, which claims that constituencies do not properly recognise and might not even be able to appropriately assess the specific characteristics of biotech companies.
The importance of the combination of these different factors was emphasised by F1:

**Extract 3.10 (Q_2.1.2; F1)**

Q_2.1.2: “What are the main value drivers of biotech companies?”

F1: “Research and development results, patents and licenses as well as existing products which the company owns as well as derived from this the customer relationships, although they can only contribute to the value if a respective product exists.”

A fund manager highlights the need for a link between potentials, results and customer relationships, which is currently not described in published financial statements. The uncertainty about future outcomes has already been addressed by some authors who suggest the application of option price theory to determine financial value (Lin and Kulatilaka, 2007; Trigeorgis, 2000, pp. 1–4). Auditors also confirm these results. They broadly refer to intangibles as the primary source of added value and that those intangibles “must result in a revenue stream in the future” (A1).

*Overall, the results confirm that the main value drivers are non-tangible in nature. The results also indicate that the combination of these single value drivers is a significant contributor to the added value of a company. Most value drivers are deemed to be relevant for the fund managers and banks’ decision processes, although they are not presented in current financial statements, which confirms the claims of the literature, as discussed in section 2.5.*
3.3.3 Financial statements of biotech companies – Are they decision-useful?
What should be changed?

P9: Constituencies do need more and different information than that in financial statements to make better decisions.

Banks would prefer companies to describe their managerial tools, especially planning, budgeting and controlling tools, explain business development in the last fiscal year and provide an overview of the expected business development within the next three to five years. All these should also be audited by an independent auditor, some added. As Bank B1 stated as regards possible inclusions in the financial statements:

Extract 3.13 (Q_2.2; B1)

Q_2.2: “What do you think has to be changed in financial statements of biotech companies, i.e. included or not included in these financial statements, so that these financial statements fulfil their principal purpose?”

B1: “Common and clear measurement principles should exist and no choices of accounting treatments. Generally, the number of accounting choices particularly concerning the figures should be reduced. All balance sheet and profit & loss line items should be explained in a text format. Statements should be included about planning and controlling instruments of a company. Statements should also be included about the business development of most recent fiscal end period and the future business development, let’s say for at least the next three years as well as about a company’s business strategy. All that information should be audited from an independent public auditor with a statement about whether the financial statements are really in conformity with the actual economical situation of a company.”

Bank B2 explained that they would prefer a future business development outlook of five years. Bank B3 specified the information needs about future development: how a company will create a positive net cash flow in the future. It would also like a company to provide more information on what it has done with the financial
resources provided by the bank and how these resources are monitored and controlled. B3 stated:

**Extract 3.14 (Q_2.2; B3)**

**Q_2.2:** “What do you think has to be changed in financial statements of biotech companies, i.e. included or not included in these financial statements, so that these financial statements fulfil their principal purpose?”

**B3:** “I would highly appreciate if the company would report more about its future capabilities to generate positive net cash flows. I would also be interested how the company works with our money. This could be made, for example, through a kind of credit line reporting in which it discloses what it has made with the money and how the projects in which the money is invested are monitored and controlled. Overall, it would be beneficial to know how the controlling tools look like.”

Bank B4 would also be interested in “how the company will generate revenues and profits in the future, i.e. with which resources and methods should this be achieved and which strategy is taken to repay the loans.” Bank B6 provided similar remarks to Bank B4. Bank B5 suggested common accounting principles and more explanation about financial statements.

Fund managers suggested a common set of accounting principles, a clearer presentation of all the risks and rewards of a company, more detailed segment reporting and more information about products including past developments and future outlooks. In addition, detailed information should be provided for segments and each single product including products that are not yet sold in the market. One confirmatory example was F6:

**Extract 3.15 (Q_2.2; F6)**

**Q_2.2:** “What do you think has to be changed in financial statements of biotech companies, i.e. included or not included in these financial statements, so that these financial statements fulfil their principal purpose?”
“Our current problem is that we have to compare financial statements according to different accounting rules. It is every time very difficult to compare two companies, of which one prepares its financial statements according to US-GAAP and the other according to HGB [‘HGB’ refers to German accounting rules]. Even if I am primarily interested in the future outlook, the past success is a good indicator of the success probability of the future. Furthermore, detailed and extensive statements about the success and the future outlook of each segment and product should be made. It is important for me to know where the resources come from, how they are used and what the result of that is. All that you can much better see within an extensive segment and product analysis.”

In summary, across all interviewees, the results show that more information about the products and managerial tools of a company is wanted as well as an outlook about future business development, a company’s current asset values and revenues, how a company intends to create positive net cash flows in future years and how this relates to a company’s strategies and objectives.

The results also confirm the need for additional information for financial statements users, as already claimed by the literature (refer to section 2.5). However, the literature, particularly the value relevance literature, does not go a step further to propose specific types of information a user might need. Hence, the results also provide unique insights into the specific information needs of financial statements users in order to enhance current financial statements.

The main elements requested by the interviewees for an enhancement of current financial reporting are extracted systematically at a later stage in order to use and incorporate them into a new intangible disclosure model.

Furthermore, it is interesting to note that fund managers see several additional information needs for financial statement users, but do not include them in that group as they receive such information mainly through private channels.
This part of the interview is also used in a later stage to systematically extract relevant information that should be included in revised financial statements, namely the new IDF model.

3.3.4 Knowledge valuation and reporting in published financial statements

P7: Constituencies find it useful and do want to see the valuing and reporting of knowledge in financial statements.

Q_3.1: What do you think about reporting of “knowledge” in financial statements of biotech companies?

The majority of companies recognise that knowledge is insufficiently reported. They would be in favour of knowledge reporting if it does not compromise a competitive advantage and if that kind of information is objective, i.e. reliable.

All banks except one, B5, would highly appreciate knowledge reporting in financial statements. Bank B5 rejects such reporting as it regards it as highly subjective without considering the potential objective reporting of it.

Fund managers would find knowledge reporting useful, although they do not understand how this could happen. That causes a certain degree of uncertainty about knowledge reporting. One fund manager refers to objective reporting, which might be compromised by knowledge reporting. For that purpose, he (F4) suggests reporting outside the objective reporting in the financial statements, but in the additional information in the annual reports.

Three auditors find knowledge reporting to be useful, but are concerned about the lack of objectivity. The other three think that such reporting is already carried out by companies in a more general and verbal sense. It may be induced by those three statements that they find knowledge reporting as useful as well.
Overall, the results show that the majority of interviewees are in favour of knowledge reporting, although some doubts exist regarding how this can be reported objectively. One fund manager suggests such reporting outside the financial statements, but in the annual reports, if it cannot be done objectively.

The results from the interviews support the claims from the literature that more information about a company’s knowledge is requested by constituencies. It also confirms the initial assumption that a more pragmatic approach towards this issue is preferred to move forward on this complex topic. Few interviewees raised concerns about how such information can be provided in an objective manner, i.e. financial statements users can rely on them. It seems that interviewees understand the issues arising if discussed in the context of a strict financial accounting framework, but they seem to prefer to receive such information even though cannot meet all the qualitative characteristics required by financial accounting standards setters. The latter might also mean that either current financial accounting criteria are inadequate for intangible disclosures or the current framework has to be interpreted differently to adapt it to the new phenomena around intangibles disclosure (refer to section 2.2.1.4). This research does not focus on possible changes to the financial accounting framework. It rather looks directly at how intangible disclosures can be improved to better suit the needs of financial statements users. As a consequence of these results, further research might be necessary relating to how to improve the current financial accounting framework and align it to the specific needs found in this research.

Q_3.2: Would it be (decision) useful – from your point of view – to publish information about “knowledge” in biotech companies in financial statements?

All banks find knowledge information to be useful. Three banks (B3, B5, B6) add that such information should be reliable. One (B4) explains that it already uses such information from different sources such as MD&A reports and meetings with management.
Three (F3, F5, F6) of six investors express explicitly that they would find it useful. One of them (F6) expects reliable and comparable information, whereas another (F5) would only support such reporting as an attachment to the financial statements and not in the financial statements themselves, as, according to him, such information lacks reliability and objectivity.

One investor (F4) comments that he receives that kind of information from the management of the company and therefore he would not see the necessity to report such knowledge in the financial statements. This finding relates to the debate about private disclosures, which is not analysed further in this thesis. Also, one investor (F1), who finds it generally useful but does not want to have more information in the financial statements about knowledge, also receives all his information that is not the financial statements directly from management (refer to Q_3.1). One investor is completely uninterested with regard to such reporting.

Four auditors (A1, A2, A4, A6) expect that knowledge reporting would be useful for decision-makers, although one (A1) distinguishes between different businesses. Two (A3, A5) do not find such reporting to be useful, as they do not think that it could be reliable and objective.

In summary, the majority of interviewees find knowledge reporting to be decision-useful. Some of them are concerned that such information could lack objectivity. Some already use information about the knowledge of a company for their decisions.

This result confirms the view in the literature (refer to section 2.2.1.4). It particularly confirms similar findings from Holland (2006). However, it also shows that financial statements users may have a different view on decision-useful information. Hence, it indicates that financial accounting standards setters should re-deliberate their concerns, as they believe that such information is not decision-useful as it lacks the fundamental qualitative characteristics of financial information. It seems that their reason for the reluctance to change financial accounting standards on intangibles disclosures is not supported by stakeholders.
Q_3.3: Why would information about “knowledge” be useful/ not useful from your point of view?

Four banks (B2, B3, B4, B6) find such information to be useful, as more information about a company’s knowledge basis would make current estimates about future cash flow streams more reliable and help loans approval, as that is based on a company’s ability to generate future cash flows sufficient to repay the loan.

Two investors (F2, F6) state that the more accurate the information an investor receives about the value drivers, the more he or she can value the company and its future success. Knowledge is certainly a very important value driver in every company. Another investor (F3) rejects any information about knowledge in the financial statements, as he could not assess such information properly. Also, he is currently not sure if he really needs such information, e.g. about individual scientists.

Four auditors (A1, A2, A4, A6) would find knowledge reporting to be useful, especially for investors, as knowledge is a significant part in the total value chain of a biotech company and therefore would provide investors with additional information about a company’s ability to produce future net cash inflows. Two auditors (A2, A4) would reject the usefulness of such information, as auditors have to bear much more risk because such reporting, from their points of view, could not be made in a reliable manner.

These results show that the majority of interviewees confirm the usefulness of knowledge reporting. They provide different reasons for it, such as it would show the different value drivers of a company in more detail and therefore provide useful information for the prediction of future success. Further, it is decision-useful, it could increase comparability across companies and it could show how current knowledge will be transformed in the future to cash flows, but it would also increase the reliability of own future cash flow estimates. They also explain that information about knowledge is forward looking and as such inherently incorporates uncertainty, but this uncertainty should be clearly disclosed. As also confirmed later, the majority of interviewees also add that objective information requires particularly verifiable information.
Q_3.4: Do you think, reporting and valuing of knowledge would be considered useful by other constituencies (banks, investors, entrepreneurs)?

Five of six investors, i.e. all except one (F3), would find such reporting useful for other constituencies. Interestingly, one (F1) adds that this is interesting and useful for everybody at any time, but he is not sure whether this can ever be properly filtered because of increasing information complexity.

*In summary, the majority would find the valuation and reporting of knowledge in the financial statements as useful. Two auditors have concerns about this kind of valuation and reporting and suggest doing it outside current financial statements. One interviewee from the fund manager group and one from the companies group are sceptical about it and question whether people are interested in it. Another company member only added some conditions for such reporting, mainly that this kind of information is objective.*

Q_3.5: Imagine knowledge could be valued and reported reliably in financial statements (i.e. in a perfect world), would financial statements be more useful from your point of view – and why?

One investor (F1) does not find it useful at all, as he explains that the more information included in the financial statements, the higher is the information density and the reader thus has to include additional filter functions to get the right and useful information. From his point of view, such information, although reliable, cannot be extracted properly from the other information in the financial statements and therefore is not useful. He states that he would not find valuation and reporting in the financial statements as useful (Q_3.3), but that it might be useful for others (Q_3.4). The reason for his rejection is obviously in the uncertainty he believes such information might have. However, why does he explain that it is useful for others if he has doubts about its reliability? It seems that he rejects such valuation and reporting to avoid this information becoming public, whereas he might think that he receives such information through his private channels. This could also explain why
he strictly rejects such valuation and reporting even if reliable. However, his final reason is the information overflow the financial statements are exposed to and that it cannot be managed effectively. However, at the same time, a question arises why he uses financial statements for the initial screening and confirmation of management’s statements, but collects much more information about the company under consideration.

In summary, the results show that the majority of interviewees would find knowledge valuation and reporting as useful if reliable. However, the criterion of reliability has not significantly changed the views of interviewees. Even more, interviewees such as C2, C5 and F4 find such an assumption as unrealistic and questionable. However, the majority of interviews confirm the usefulness of such information irrespective whether it can be carried out reliably or not.

Care needs to be taken when interpreting this result, as it can be assumed that such information should be reliable to a certain degree and to a certain manner no matter what each interviewee means by reliability. It can be reasonably assumed that a certain degree of reliability is expected by interviewees when they explained that such information is useful without considering explicitly reliability as a criterion.

Q_3.6: Would financial statements be more useful for you if knowledge could be valued and reported reliably – and why? (a question just for banks, investors, entrepreneurs)

All banks would find this knowledge valuation and reporting useful for themselves. It would be useful as additional information for their rating systems, which predicts the defaults of customer loans. Any information about a company’s future success and consequently its cash flows is regarded as useful as this could improve significantly the explanatory power of the ratings as regards the estimation of the probability of defaults of customer loans and consequently it would enhance any credit decision.
For one investor (F1), usefulness does not increase for him. Only information that is comparable and reliable could increase the usefulness of the financial statements. He also does not find such knowledge valuation and reporting useful in general, which may be caused by his own assessment that it cannot be carried out reliably. This could explain why he does not find such valuation and reporting as useful, as he might think that this is impossible. If it were possible, he would be less reluctant and rather recognise an enhanced usefulness of the financial statements. Another investor (F2) uses the financial statements only as a confirmation tool and as such knowledge reporting and valuation would probably not increase the usefulness of them.

Therefore, the results show that the majority of companies and banks as well as two investors (F3 and F6) would find knowledge valuation and reporting to be useful. F3 and F6 add that it should be carried out reliably, while the other four investors explain that reliable knowledge valuation and reporting would not increase the usefulness of the financial statements for them. Investors F1 and F4 did not find knowledge valuation and reporting generally to be useful, even if it can be carried out reliably (Q_3.5). F3 considers it generally to be useful if reliable (Q_3.5), but he does not consider it to be useful at all for himself no matter whether knowledge can be valued and reported reliably. Investor F2 is sceptical about it, as he uses the financial statements only for a limited purpose. However, he generally finds knowledge valuation and reporting as useful (Q_3.5).

Overall, the majority of interviewees are in favour of knowledge reporting, although some doubts exist about how this can be objective. Therefore, H7 is generally confirmed, even though it is expected that such reporting is reliable to a certain degree.

The results also provide a more distinguished view on the issue of reliability. It seems that stakeholders have a different interpretation about reliability compared with financial accounting standards setters. However, in contrast to the literature, some interviewees raised the issue of reliability relating to intangibles disclosures. Hence, the results show that interviewees stand in between these two opposite views (refer to section 2.3.4).
3.3.5 Knowledge information and investment decisions

**P4: Constituencies already recognise, outside the financial statements and in different manners, the knowledge value within a company**

**Q_4.1: How do you identify (manage) and evaluate “knowledge” in a (your) company?**

One company (C1) states that identifying and evaluating knowledge is included in the project evaluation. This evaluates all research projects once a year and determines a revenue expectation, which is determined by the price multiplied by the number of products and services sold. This depends on market share and possible market volume. In each project evaluation, fees for patent protection, employee costs by internal charge rates and similar costs are included and, therefore, knowledge is already included implicitly in the company’s project appraisals.

Company C6 aims to identify unknown and hidden knowledge by regular employment dialogues. Additionally, it has databanks that include all relevant information about patents and licenses as well as the expertise of individual employees. It has started creating a risk and knowledge management system that is not in place yet.

One bank (B1) explains that this kind of information is reflected as qualitative factors in the rating tool, which measures the creditworthiness of a customer. In this rating tool, questions are asked about how the bank assesses management and other non-quantitative factors. Bank B2 confirms the statement from B1 and adds that it also evaluates with its best knowledge, more qualitatively, the future outcomes of R&D projects, the development of new products and the strategy of a company.

A third bank (B3) states that it does not analyse the knowledge of a company explicitly. It only considers it implicitly by evaluating product development, management quality and other qualitative information. This information is used to calculate the risk-adjusted cash flow stream of a company. Any weak assessment
would result in higher discounts/used interested rates. This is similar to the procedure explained by the other banks (B4, B5, B6).

One investor (F1) states that he arranges a meeting with management and asks for an on-side walk through the company to assess it based on his subjective view. He would appreciate having a systematic procedure allowing him to analyse a company in this respect in a more straightforward way. He adds that an investor is unable to ask each employee as a consultant, although it could be useful in some instances. Therefore, to receive at least one common and known set of reliable information, auditors must offer reasonable assurance on at least some necessary information. On that basis, he subjectively estimates a company’s future financial development. Another investor (F2) adds that he needs a company’s explanation about the sources of future success and related cash flows of the company. Four other investors (F3, F4, F5, F6) confirm these statements.

It should be noted that three investors (F1, F2, F4) find knowledge valuation and reporting to be less useful, although they explain that they do it implicitly through a cash flow projection and an analysis of which sources those cash flows come from. Further details are considered and discussed in the following chapters.

Overall, the results confirm that constituencies consider value relevant knowledge information in their decisions, but do it in different manners and in most cases rather implicitly, as they are less interested in single elements compared with the combination of non-tangible elements that contribute to a company’s future development. Most interviewees explained that they identify them in discussions with management about major value drivers. Such information is incorporated into their own cash flow projections and respective analyses, particularly of future cash flow sources. It can be concluded that intangibles related information is value relevant as claimed by the literature and that such information does not come from current financial statements (refer to section 2.2.1.4). This further indicates that decision-useful information, in particular intangibles related information, is missing in current financial statements (see also the results for H7 in the previous section as well as section 2.3.4). The results also show that some findings from the PAT literature cannot be generally confirmed. For example, trading market share for a multiple price of the book value as well as the high volatility of shares – as an
indicator of the high uncertainty inherent in the company’s value – are regarded as good indicators to explain that constituencies, particularly investors, do not properly recognise/assess the intangible-specific characteristics of such companies (Lev, 2001; Edvinsson, 2000; Carroll et al., 2000; Mouritsen, 2005; Gosh and Wu, 2007; Sallebrant et al., 2007; refer also to section 2.5). Investors do recognise company-specific intangibles related information, even though they all do it differently, but that information comes from outside current financial statements. Hence, the difference between the market price and the book value might indicate that many intangible assets are not recognised, but that the volatility of share prices does not necessarily reflect the inability of investors to consider the intangibles related value relevant information of a company. However, the volatility might reflect the inherent specific nature of intangibles (Australian Accounting Standards Board, 2008; refer also to section 2.2.1.2), which might be associated with higher uncertainty.

Several elements, types of information and minimum requirements for an IDF model are identified through the interviews and incorporated into the new knowledge valuation and reporting model that is described in the next chapter.

3.3.6 Understanding the term “knowledge” in practice

P1: Constituencies have a different understanding about the meaning of knowledge among each other and compared with the literature.

Q_6.1: What is the meaning of “knowledge” relating to biotech companies as you have used it before?

Companies and banks relate “knowledge” to employee know-how, capabilities and experience as well as to companies’ “stored” know-how such as R&D know-how, legally protected know-how such as patents and the capability of the organisation. In addition to these individual components, a unique combination thereof, as stated by
C2, to translate customer needs into new products and services is also regarded as a kind of knowledge.

Fund managers and auditors describe knowledge as employee know-how and capabilities, the know-how and capability of the organisation and the unique combination thereof to produce new products and services. Some interviewees also include customer relationships and related know-how.

The term knowledge as defined by interviewees is similar, or essentially the same, as defined in section 2.1. Consequently, it is also similar, or essentially the same, to the term intangibles defined in section 2.1. The definitions provided by interviewees are also consistent with the three different categories of intangibles proposed in the literature as a general intangibles classification scheme (see also chapter 2): internal, which includes structural and human-related intangibles, and external intangibles such as customer relationships. Knowledge seems to be everything that contributes to the company wealth and value that is not a physical and financial asset. This is also similar to the definition of Lev (2002, 2003) that everything that contributes to profitability, and that is not a physical and financial asset, is a knowledge asset. In other words, earnings that cannot be traced to physical and financial assets must come from knowledge assets. A small difference is that Lev refers to the contribution to profitability and earnings, whereas the knowledge as defined before contributes more generally to the value and wealth of the company. Furthermore, and in contrast to Lev’s definition, the definitions of interviewees provide more insight into the components and indicate the relevance of their unique combinations.

### 3.3.7 Understanding reliable financial information

**P3: Constituencies have a different understanding about reliability with regard to information within financial statements**

**Q_6.3:** What is the meaning of “reliability” for you in relation with reporting and valuing of “knowledge”?
C1 and C6, but also C2, explain reliability with verifiability, verifiability to underlying data, information and assumptions so that financial statement users can make their own assessments. This also provides an interesting view on the theory of information transparency. Based on their views, the higher the degree of transparency and the more information provided on specific items, the more reliable are those items under consideration. C5 would require reliable information be free of bias and subjectivity. C3 defines reliability with comparability and C4 only explains that reliability is an important concept.

Verifiability is the most frequent requirement for reliable information. All banks explicitly state this criterion. B1 elaborates further that he would require verifiable information as derived from underlying data and information. Objectivity is also an important criterion for reliability, which is also combined with their preferences for audited information.

Fund managers have a broader view on this topic. F1 refers to the transparency, openness and verifiability of information. F2 requires a reasonableness of information. Clarity and truthfulness are relevant criteria for F3. F4 and F6 require comparability of information in order for it to be reliable. Verifiable information is reliable information for F5 and F6. Similar to the banks, verifiability means that the information provided can be traced back to underlying information, data and figures, as well as to underlying assumptions. Auditors define reliability as verifiable and comparable (A4, A5, A6) and not manipulated or biased (A1, A3, A4, A5). It should also be objective and neutral (A4, A5).

In summary, the results show that the majority of interviewees, and particularly the fund managers, refer to the transparency, openness and verifiability of information in order to be reliable. All banks require verifiable information to be reliable. Reliable information is regarded as similar to verifiable information and hence different compared with the IASB financial accounting framework where these two terms have different meanings (refer to sections 2.2.1.2 and 2.2.1.4). Verifiability means for them that the information provided can be traced back to underlying information, data and figures or underlying assumptions. Another fund manager requires a reasonableness of information. Clarity and truthfulness are relevant criteria for a
third fund manager. Comparability of information in order to be reliable is stated by two fund managers.

Referring to the IASB’s CFFR (refer to section 2.2.1.2), financial information is useful if it is relevant and represented faithfully (QC4 of the IASB’s CFFR, 2011). Financial information is relevant if it is capable of making a difference in the decisions made by users (QC6 of the IASB’s CFFR, 2011). It is capable of making a difference in decisions if it has predictive value, confirmatory value or both (QC7 of the IASB’s CFFR, 2011). To be faithfully represented, financial information should be complete, neutral and free from error (QC12 of the IASB’s CFFR, 2011). This does not mean accurate in all respects and in absolute terms (QC15 of the IASB’s CFFR, 2011). Disclosures of all related and relevant information such as estimation processes, limitations and any uncertainties that significantly affect the estimate in an open and honest manner (QC15 and QC 16 of the IASB’s CFFR, 2011) are often judgmental and very likely subject to changes until the realization occurs. Such disclosures are still deemed accurate if the available information is as accurate as possible in that particular and uncertain circumstance. The usefulness of information that is relevant and represented faithfully can be enhanced by comparable, verifiable, timely and understandable information even though such criteria are not the primary criteria for usefulness (QC19 of the IASB’s CFFR, 2011).

It is clear that the requirements of constituencies and what the IASB has established are similar. Differences might exist in respect of the hierarchy constituencies would see for verifiability and comparability. The majority require financial information to be verifiable in order to be decision-useful in comparison with the IASB, which establishes verifiability as a qualitative characteristic that enhances the usefulness rather than establishes it (refer to section 2.2.1.2). It is interesting to note that the interviewees responses indicated a strong focus on verifiability which is more akin to a stewardship approach and in line with the emphasis on reliability in the IASB’s conceptual framework. The IASB had an opposite view at that time: relevance should be considered first and reliability/faithful representation next (QC42-47 of the IASB’s CFFR, 2011; BC2.59-2.65 of the IASB’s CFFR, 2011; Whittington, 2008). The results from the interviews support the alternative view in addition to the fair
value view as proposed by Whittington (2008), which are similar to stewardship and
decision-usefulness, respectively72 (refer also to section 2.2.1.1).

The next chapter analyses in more detail how a new IDF model could fit into the
current CFFR.

3.3.8 Knowledge information and the financial accounting framework

P5: Constituencies do not require that information in financial statements
including information about knowledge is in accordance with the general
financial accounting framework

Q_5.1: Which demands on data and information about “knowledge” in financial
statements would have to be fulfilled?

The results show that several interviewees wish explicitly to have verifiable
information as an explicit demand (10 respondents). In addition, auditors only refer
to the requirement to fulfil the common set of criteria for financial information,
which implies they also require verifiable information. In addition, important criteria
mentioned by interviewees are comparability and reliability. Several respondents
also refer to information that is disclosed under a common set of rules. Three
companies (C2, C4, C6), two banks (B4, B6) and two fund managers (F1, F4) also
explicitly require monetary-quantified information. Interestingly, interviewees,
particularly C1, B5 and B6, accept uncertainty in disclosed forward looking
information, but they require much underlying data and information for such
disclosures to trace them back and to verify reliability. Further, B2, B4 and B5 would
prefer a clear and separate presentation of knowledge related information.

72 One reason for Whittington (2008) to use the term ‘alternative view’ rather than ‘stewardship’ is
that the attributes of the latter are often and too easily associated with consequences that do not
necessarily and strictly follow from these attributes such as the implied preference for historical cost
accounting under a stewardship approach. The alternative view is characterized by, among others,
accountability to present shareholders, as is stewardship.
Referring to the IASB’s CFFR, the fundamental qualitative characteristics of financial information are relevance and faithful presentation (QC4 and QC17 of the CFFR). Relevant financial information is capable of making a difference in the decisions made by users, i.e. it has either predictive or confirmative value (QC6 and QC7 of the CFFR). Faithful representation refers to three characteristics a depiction should have: complete, neutral and free from error. However, it does not mean accuracy in all respects (QC12 and QC15 of the CFFR). The term reliability has been replaced by faithful representation, as the IASB understands that users did not understand the term reliability (BC3.19, BC3.23 and BC3.24 of the CFFR). Comparability, verifiability, timeliness and understandability are qualitative characteristics that should enhance the usefulness of relevant and faithfully represented information (QC19 of the CFFR; refer also to section 2.2.1.2).

Interviewees were not asked in respect to the IASB’s qualitative characteristics described above, as they were issued in September 2010 before the interviews were carried out. However, it is evident that interviewees rank the importance of certain characteristics of knowledge information such as verifiability and comparability different compared with the IASB, as the IASB does not deem such characteristics as fundamental in its framework for financial statements. However, it is clear that interviewees were asked particularly about the characteristics of knowledge related information and not about general qualitative characteristics.

Furthermore, according to OB4 of the IASB’s CFFR, existing and potential investors, lenders and other creditors need information about the resources of the entity, claims against the entity and how efficiently and effectively the entity’s management and governing board have executed their responsibilities to use the entity’s resources in order to assess its business opportunities to create future net cash inflows. They should also receive information which should help estimate the value of the reporting entity (OB7 of the CFFR). That type of information is exactly what interviewees requested. However, current financial statements do not provide sufficient information about knowledge as explained above. A reason for this could be that the IASB refers to the direct information provided within the financial statements, but interviewees refer to more detailed and indirect information.
underlying certain information induced from the details in order to validate the reasonableness of it.

Q_5.2: What would have to be ensured principally from your point of view so that “knowledge” could be reported and valued reliably in financial statements?

For the second part of H5, the responses were similar and consistent to those relating to the previous question. In addition, two companies (C3, C5) added that knowledge related information should be audited. Moreover, a common set of accounting rules should also exist even though this is rather independent of this particular topic. Again, banks and investors (B3, B4, B5, B6 and all investors (F)) indicated that they need information that is relevant to estimate future cash flows.

Q_6.4: Please rank (by ticking) each the following from 1 (very important) to 5 (not important):

For reliability of information and data in financial statements, how significant is for you …

verifiability of these data and information

representation faithfulness of these data and information

neutrality of these data and information

comparability of these data and information

consistency of these data and information

It was also asked for the reliability of information and data in financial statements, how significant is for you …
1) verifiability of these data and information
2) representation faithfulness of these data and information
3) neutrality of these data and information
4) comparability of these data and information
5) consistency of these data and information

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</table>

Table 3.5: Summary of responses related to H5/ Q_6.4

Although some debates in the literature about the usefulness of general accounting principles exist (refer to sections 2.2.1.2 and 2.2.1.4), this research generally confirms the requirement to comply with those principle characteristics that the information in the financial statements should have. Except for the consistency of data and information, the majority of interviewees rank those principles as very important or important. This is also true for consistent information and data, although some statements were given that this principle is less important. Again, it is interesting to see that verification ranks as top of the criteria even though, as discussed above, the IASB regards verification only as a sub-criterion. Overall, it can be concluded that all criteria should be considered in presenting knowledge related
information in the financial statements. However, these qualitative characteristics appear in a different pyramid structure than suggested by the IASB, as shown by the interviews (refer to section 2.2.1.2).

Furthermore, some interpretations of these qualitative characteristics such as reliability also seem to differ between stakeholders and financial accounting standards setters. The latter result also supports the preliminary and indicative findings of the AASB that the reliability of measurement is a function of, inter alia, the availability of relevant data for each intangible item (AASB, p. 41), i.e. reliability depends on verifiability (refer also to section 2.2.1.2). As a conclusion for this research, any new or enhanced IDF model should comply with the needs of stakeholders. Furthermore, financial accounting standards setters have to re-deliberate the current hierarchy and definition of the various levels of the qualitative characteristics of financial information with regard to intangibles disclosures.

### 3.3.9 Ingredients of an IDF model – users’ boundless perspective

Previous sections showed that the financial statements are still useful even though they lack certain decision-relevant financial information such as intangibles related information. Hence, they are an incomplete financial information source about a company (section 3.3.1). Different types of information are missing, such as insights into value drivers (section 3.3.2), products, managerial tools, how a company intends to create future net positive cash flows and how those cash flows are linked to the business strategy and objective (section 3.3.3).

It was confirmed by interviewees that intangibles related disclosure should be enhanced as it is regarded as decision-useful (section 3.3.4). They already try to capture the intangible related value of a firm even though the specific information they request and their approaches differ (section 3.3.5). It seems that a common approach towards intangibles disclosure is needed that is accessible to a wide range of financial statements users and presented in a more uniform manner. Such an enhanced IDF should consider the qualitative characteristics such intangible related
information should have from constituencies’ points of view (section 3.3.7; section 3.3.8).

Based on the above results, the transcribed interviews were re-analysed in light of the components that should be incorporated into an enhanced IDF model. Table 3.6 shows the various components identified from the interviews.

<table>
<thead>
<tr>
<th>Respondents having indicated the respective component</th>
<th>Model component</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1, C4, C5, C6, B1 - B6, F4, F6, A1, A2, A3, A4, A6</td>
<td>The model should provide more forward looking information (including a 3-5 year budget and a literal description of company’s future development).</td>
</tr>
<tr>
<td>C1, B2, F1, F4, A2, A6</td>
<td>In order to make financial statements not more complex and less understandable, the rationale and further detailed discussions of that model should be presented in a separate footnote/section at the end of the financial statements.</td>
</tr>
<tr>
<td>A1-A4, A6, C1, C3-C6, B1-B6, F1-F6</td>
<td>The model has to include future cash flows and revenue streams.</td>
</tr>
<tr>
<td>A3, A4, A5, A6, C1-C6, B2-B5, F1-F6</td>
<td>To be reliable, the model has to be clearly, at a minimum, verifiable, comparable and consistently applied.</td>
</tr>
<tr>
<td>C2, C4, C6, B3, B6, F1, F4</td>
<td>Quantitative measures are preferred.</td>
</tr>
<tr>
<td>B1, B2, A3, C5, F3-F6</td>
<td>Information and measures should be linked to company’s strategy and objectives (as well as to the general planning and budgets of the company).</td>
</tr>
<tr>
<td>B1, B3</td>
<td>Describing more about managerial tools esp. planning, budgeting and controlling tools.</td>
</tr>
<tr>
<td>B1, F4, F6</td>
<td>More detailed description of last years development.</td>
</tr>
<tr>
<td>C1, C3, C4, C5, B1, B3, B6, A6, F1, F2</td>
<td>Should be audited.</td>
</tr>
<tr>
<td>B1-B4, B6, F1-F6, A1, A2, A5, A6, C1, C4, C5, C6</td>
<td>Describing more about value drivers (and value added chain).</td>
</tr>
<tr>
<td>C1-C4, C6, B2-B5, F1-F3-F6, A3, A4, A6</td>
<td>One common set of accounting principles.</td>
</tr>
<tr>
<td>B2, F2, F5</td>
<td>Clear presentation of financial statements in general and of all risks and rewards of a company specifically.</td>
</tr>
<tr>
<td>F1, F4, F5, F6</td>
<td>More detailed segment reporting.</td>
</tr>
<tr>
<td>C1, C5, C6, F4, F5, F6</td>
<td>More information (past and future) about products.</td>
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<tr>
<td>F6</td>
<td>Details information about products and segments should be provided over a period of several (past and future) years.</td>
</tr>
<tr>
<td>F1-F6, C1, C3, C6, B3, B4, B5, A3-A6</td>
<td>Objectivity, reliability.</td>
</tr>
<tr>
<td>A2, B6</td>
<td>Common Definition of knowledge.</td>
</tr>
<tr>
<td>B2, B5</td>
<td>More information in financial statements per line item.</td>
</tr>
<tr>
<td>F2, F5</td>
<td>More information about business and economic risks and rewards.</td>
</tr>
<tr>
<td>F1</td>
<td>More financial ratios.</td>
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<tr>
<td>C6, B1, B5, F6, A3</td>
<td>Less accounting choices.</td>
</tr>
<tr>
<td>C2</td>
<td>Clear definitions of terms used in financial statements.</td>
</tr>
</tbody>
</table>

Table 3.6: First set of components for IDF model extracted from interviews

The following elements are disregarded explicitly, even though they might be implicitly considered such as more information in the financial statements per line item, less accounting choices or segment reporting through the existing segment reporting requirements, as they do not relate directly to an IDF model:

- Describing more about managerial tools, especially planning, budgeting and controlling tools;
• One common set of accounting principles;
• More detailed segment reporting;
• Detailed information about products and segments should be provided over a period of several (past and future) years;
• More information in financial statements per line item;
• More financial ratios; and
• Less accounting choice.

All elements stated at least twice by interviewees and that relate to intangibles are considered in an enhanced IDF model. At least two referrals are needed, as one interview candidate is not deemed as representative of the whole group. The number of referrals is a matter of judgment. However, a low number is chosen here to capture a broad spectrum of preferences and to avoid something useful being disregarded. Some candidates might not have thought about certain elements at the time of the interview even though, if confronted with them, they might have found them to be useful. The usefulness of these elements is, as an integrated part of the new IDF model, validated with constituencies in any case. The building process of the new IDF model including how the different components are integrated is described in chapter 4.

### 3.3.10 Summary and preliminary results

Based on the analysis of interviews, it is clear that financial statement users do their own intangibles assessments, that they still use financial statements and that they would appreciate more intangibles related information. It is also clear that financial statements are useful to a certain degree and that usefulness seems to be differently interpreted by interviewees compared with financial accounting standards setters. However, financial statements could also be significantly improved in order to provide more and better information, which would help existing and potential investors, lenders and other creditors estimate the value of the reporting entity.

This part of the research study has also shown that the position of accounting standards setters and the community of advocates of alternative intangibles reporting
are not fully in line with the views and expectations of financial statement users, i.e. those to whom the financial statements are addressed. Accounting standards setters do not change anything, as such a change could harm the reliability and usefulness of the information within the financial statements they argue. Compared with financial accounting standards setters, the community of advocates of alternative intangibles reporting claim that current financial statements are not useful due to missing information about intangibles. The truth is somewhere in the middle. The study so far has laid down the fundamentals and reasons for the following research. It has also identified elements that financial statement users would find useful in an enhanced IDF model. The aim of the following research is to find this ‘middle’, that means to describe an appropriate IDF model that may include the valuation and reporting of intangibles integrated in the financial statements. The aim is achieved through a continued iterative research process which the components as referred to in section 3.3.9 already belongs to.

The next section analyses in detail different types of IDF models such as intangibles valuation, measurement and reporting models and approaches as suggested in the literature. Based on these models and approaches, another questionnaire was prepared for the same interview candidates as interviewed in the first round. It is the aim of the following section to identify more specific elements for an enhanced IDF model including the most appropriate model(s) or approach(es) financial statements users would prefer.

Following the next section, an enhanced IDF model is developed in chapter 4. The new model uses the results found in previous sections, particularly in section 3.3.9, as well as in the following section as fundamental building blocks. This new IDF model is validated as discussed in chapter 5 (with a representative of an accounting standards board and with financial statement users in different industries and regions).
3.4 Refining research on preliminary findings

3.4.1 Research objective and methodology

The research objectives remain the same as described in section 3.2.1. The research methodology for this part of the study is complementary to the previous approach as described in the preceding sections rather than a methodology for its own.

As it was shown in previous sections, financial statements users are interested in more intangibles related information. They also consider the financial statements to be a useful tool, but financial statements do not fulfil their objectives and usefulness to the extent as described by accounting standards boards such as the IASB\(^\text{73}\).

Therefore, the purpose is to obtain deeper insights from interviewees about specific and general factors that are useful to improve the current practice of financial reporting relating to intangibles disclosure, particularly currently published financial statements. This research part follows from and complements section 3.3.9.

Specific factors mean specific elements that should be incorporated in an improved intangibles disclosure model for external users. General factors indicate different intangibles disclosure approaches and frameworks, i.e. different ways to present intangibles related information. Approaches in this context are broader and more general. They are general concepts and relate to how knowledge information should be presented and disclosed, particularly specific elements in financial statements.

To obtain more details, the intangibles valuation, measurement and reporting models and approaches suggested in the literature were validated. It is obvious that if all respondents choose the same approach and elements without indicating other relevant approaches and elements, there would be no need for a new intangibles valuation and reporting model. In such a case, the chosen approach and related elements only had to be associated with current financial statements. However, it was already evident through the first set of interviews that respondents have different views on what a possible intangibles valuation and reporting model should look like. This was also one of the reasons to carry out this in-depth analysis about the various intangibles valuation and reporting approaches and elements to be considered in a

\(^\text{73}\) Refer to section 2.2.1.1.
new and more holistic IDF model and proposed to financial accounting standards setters.

Again, the overall intention of this part of the study is to refine the preliminary research results through a more detailed analysis of the required intangibles related information components. The findings contribute as fundamental building blocks for an enhanced IDF model for financial statements users. As a natural consequence of this part of the study, current proposals relating to intangibles measurement and reporting approaches are validated. The new model is developed based on these fundamental building blocks as described in more detail in chapter 4. The outcome of the validation of the new model is presented and discussed in chapter 5.

### 3.4.1.1 Research strategy and design

As described in previous sections, the distinction between qualitative and quantitative research methodologies is not clear cut. It is argued that qualitative researchers aim to gather an in-depth understanding of human behaviour and the reasons that govern such behaviour and that they are more interested in investigating the *why* and *how* of decision-making, not just *what*, *where* and *when* (Gomm, 2008).

Although the objective of this research step is to understand the “what”, it is also intended to explore the “how”. This part of the study wants to achieve a deeper understanding of “what” the constituencies would find to be useful in respect to intangibles disclosure relating to the financial statements. It is a refinement of the preceding research because the interviews confirmed the usefulness of enhanced intangibles disclosure in the financial statements and indicated several factors they would like to see in such an IDF model. The research process tends to be rather common, as information and data are collected by semi-structured interviews (Gomm, 2008).

However, and as a complementary aspect of the preceding research, it is also intended to understand “how” constituencies would like to see an improved set of published financial statements. It is not generally aimed at obtaining a general understanding of what they might think financial statements as a whole should look
like, but rather to understand the principal models and approaches they would prefer in an improved IDF model relating to current financial statements. How the financial statements should look as a whole may be specific to their formats but also general to its content, and this is beyond this research topic on intangibles disclosures to financial statement users. Therefore, the purpose is to understand what general kinds of factors and principal presentation, valuation and reporting approaches as part of an enhanced IDF model constituencies would prefer. However, the distinction should become clearer in the course of the explanation of this study.

Within this part of the research, the research strategy has common characteristics of qualitative as well as quantitative research strategies. It is deductive in nature, i.e. validates theory, but also inductive, i.e. generates theory. However, the main purpose is to generate new theory out of this research study with a limited number of interviewees – compared with quantitative research – in a non-quantitative manner, i.e. it characterises to a higher degree a qualitative research strategy. Consequently, this research strategy follows the previous one, or more precisely, it is within and consistent with the research strategy described in previous sections. This is emphasised through the use of questions, particularly one semi-open question, which can be seen as either an integral part of the first semi-structured interview part or as a complement to it. These are also indicated as such through question numbers such as Q_4.2, Q_4.3 and Q_4.4; they complement H4 and relate to Q_4.1 from the first interview part (refer to section 3.3.5). As Bryman states (2001), questions other than closed ones, which means similar to structured interviews, are not used a great deal in self-completion questionnaire research.

The research design of this part of the study is closely associated with the one discussed in section 3.2.4. It is essentially an extension of the empirical study based on the first set of interviews. Therefore, it remains the same case study as described in section 2.4. However, the purpose of this follow-up research was different: Section 3.4.2 refers to a case study that shed light on the views of financial statements users as regards intangibles accounting and disclosure in current financial statements. Several key themes were developed based on the literature review (refer to chapter 2). In the course of the analysis of the interview transcripts, an additional, new key theme emerged. This theme related to the need for a new intangibles disclosure
framework model which specifically responds to the needs and requirements of financial statements users. The interview transcripts were reanalysed to identify components (as sub-themes related to the new key theme) for such a new model. However, the question arose whether these components constitute a reasonably complete set of useful components as demanded by financial statements users. Another question arose in respect of whether any of the various intangibles related disclosure models as suggested in the literature could also be useful for a new model. Therefore, the case study as discussed in section 3.4.2 was extended. The same group of interviewees were asked to participate again. As this should be a very structured and focused exercise, questionnaires are used. Details of data collection (section 3.4.1.2), sample selection and entering the field (section 3.4.1.3) as well as the method of data analysis (section 3.4.1.4) are discussed in the following sections.

3.4.1.2 Data collection

A modified self-completion questionnaire approach was selected (Gomm, 2008; Elliot, 2005) for this follow-up part of the research. Self-completion questionnaires are usually similar to structured interviews. The main differences seems to be according to Bryman (2001) that self-completion questionnaires:

- have fewer open questions, as closed questions tend to be easier to answer;
- have a design that facilitates the use of it and that minimises the risk of respondent failures; and
- tend to be shorter to avoid respondent fatigue, i.e. that the respondent becomes tired of answering the questions.

Structured interviews and self-completion questionnaires are commonly used in a quantitative research strategy context in social survey research (Bryman, 2001). They are less often used in qualitative research (Creshwell, 2007; Elliot, 2007).

Self-completion questionnaires are used to enrich empirical research data and refine the results of the preceding interviews. Therefore, a less common data collection approach within this overall research strategy was chosen as the most appropriate approach to achieve the research objective. Applying more than one research design,
method, theory or source of data in a research study is often referred to as triangulation which improves the credibility of the research findings (Hopper et al., 2010; Gomm, 2008; Denzin et al., 2005; Humphrey et al, 2004; Bryman, 2001; Lincoln, 1985). This is also confirmed by Flick (2002) who states that triangulation, i.e. the use of multiple methods and designs, is not deemed as a means for validation rather than an alternative to validation\textsuperscript{74}. The combination of multiple research designs containing different methods and empirical material is best understood as a strategy to add rigour, breadth, complexity, richness and depth to any qualitative research study (Flick, 2002). Bryman also notes that triangulation often leads to overall research studies that break down the quantitative/qualitative divide (e.g. Bryman, 2001).

As indicated above, the approach selected for this part of the study differs from a standard self-completion questionnaire. The modification to the standard approach is described in the following chapter, as it relates to how the data are collected based on this questionnaire.

Relevant data were collected by three questions. These are linked to the following proposition that is based on the need to further elaborate the new theme relating to a new intangibles disclosure model and which is derived from the literature, as discussed in section 2.2.2:

**P6: Current knowledge valuation and reporting models proposed in the literature as highly relevant are not that relevant from the points of view of interviewees.**

The first question Q\_4.1 is structured in nature. It requires interviewees to assess a variety of different intangibles valuation and reporting models and relevant elements based on a five-point Likert scale (Gomm, 2008; Bryman, 2001). Interviewees also

\textsuperscript{74} For more details on alternatives to validity in the context of assessing the quality of qualitative research studies, refer to section 3.2.3.
have the freedom to add a model or single intangibles relevant elements that they believe might be useful to consider in financial statements. This is because the list of such models and elements, even though we consider 22 different intangibles valuation and reporting models as well as a variety of different single intangibles related elements, cannot be complete by nature.

The second question is fully structured requiring only ordering the most relevant factors and models chosen in the first question. These types of questions particularly fit into questionnaires (Gomm, 2008; Bryman, 2001).

The third question is semi-structured, as it requires respondents to give the reasons for their choice of the most important models. This relates to the concept of probing (Bryman, 2001), i.e. obtaining a sufficiently complete answer for the main question.

The specific first question and the other two questions being related to the first makes the interview guide more like a questionnaire, which is by definition a list of structured questions (Bryman, 2001). The following overview shows the questions raised and general approach chosen for the questionnaire (excerpts from the original questionnaire):

Q 4.2: What kind of information do you think should be included in a potential knowledge (valuation and reporting) model?

1) PLEASE RANK THE FOLLOWING (NO. 1–22 AND 23 IF APPLICABLE) FROM 1 (VERY IMPORTANT) TO 5 (NOT IMPORTANT) BY TICKING/CIRCLING/BOXING THE NUMBER YOU HAVE CHOSEN

1) FOR EACH OF NO. 1–22 THAT HAS NOT BEEN RATED BY 5, GO TO THE EQUIVALENT SUBHEADINGS (a), (b), …) AND RANK THEM IN ORDER OF IMPORTANCE (1 BEING MOST IMPORTANT AND 5 THE LEAST IMPORTANT).

Information about …
<table>
<thead>
<tr>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. … (e.g. knowledge indicators)</td>
</tr>
<tr>
<td>…</td>
</tr>
<tr>
<td>13. … (e.g. knowledge reporting approach)</td>
</tr>
<tr>
<td>…</td>
</tr>
<tr>
<td>23. Are there any other information and/or indicators you feel would be useful?</td>
</tr>
</tbody>
</table>

**Q_4.3:** Please rank the **three most important models** from No. 1–23 (of Q_4.2) above in order of their importance!

**Q_4.4:** Why have you chosen these models?

The complete questionnaire is 11 pages long (Appendix IV). The models and elements suggested in the literature validated with the different constituencies are described in section 2.2.2.

To assess the importance of the different intangible factors and approaches in the second question (Q_4.3), a five-point Likert scale was used (Bryman, 2001), although the more important part of this questionnaire is ranking the importance of the different models by interviewees. Respondents have to rank in Q_4.2 different kinds of models from 1 (very important) to 5 (not important) and afterwards in the second question (Q_4.3) rank the three most important models in order of importance.

Two main issues should be considered to modify the standard self-completion questionnaire procedure:

1) Understanding of questions by interviewees.
2) Which method is the most appropriate in the context of the other questions and the selected research design approach to obtain reasonable results for Q_4.4.

As many different suggestions were provided for the first question, and as those suggestions were abstracts of different factors and approaches proposed in the literature, there might be a danger that interviewees do not understand all the suggestions provided to them. Bryman (2001) refers to the inability of the interviewer to prompt, which means that no one is present to help respondents if they are having difficulty answering a question, e.g. because they do not understand all the suggested answers.

To overcome these issues, questionnaires were sent to the interviewees by email (all interviewees that participated in the first interviews were asked to complete this questionnaire). They were asked to complete it within two weeks. The telephone number and email address of the researcher were provided to all interviewees. They were asked to contact the researcher if they might have questions or difficulty in completing the questionnaire. All interviewees were told that the researcher would call at the end of the two weeks to clarify whether they had any problems during completion and to make sure that they had given reasonable answers, particularly for Q_4.4. The idea of the closing telephone conversation was also to mitigate the risk that the target interviewee did not complete the questionnaire him-/herself (e.g. Bryman, 2001).

Other issues should be considered when performing research using self-completion questionnaires (Bryman, 2001):

- Only a very small number of open questions, and questions with complex structures should be avoided

  ➔ Only one semi-structured question was raised and this was complementary to the structured questions stated before, namely to understand the rationale behind interviewees’ selections.

- Not knowing who answers
As explained above, to mitigate this risk, interviewees were recontacted by phone in order to ask for feedback on the questionnaire. However, a delegation is more difficult for that kind of questionnaire, as it requires interviewees’ special knowledge and reasoning.

- Questionnaires should only consist of a limited number of questions
  - It only consists of three questions of which one is a semi-structured question.

- Partially answered questionnaires are more likely, i.e. greater risk of missing data
  - To mitigate this risk, questionnaires were only sent to interviewees already interviewed and they were contacted at least twice to make sure that they completed it fully.

- Questionnaire can be read as a whole, i.e. respondents are able to read the whole questionnaire before answering the first question. When this occurs, none of the questions asked is truly independent of the others and the order is not respected by interviewees.
  - The sequence of questions was more important in the prior semi-structured interviews. This complementary questionnaire was not concerned with the “right order”; interviewees can read the questions in different orders, but they are still required to start with the first, continue with the second and close with the last question.

The response rate, which is usually critical in using questionnaires (Bryman, 2001), was not of primary concern in this context, as all respondents are personally known from the previous interviews. They were contacted personally and asked for a follow-up based on the interviews carried out before. This is also different to the common practice of self-completion questionnaires, which are usually sent out to a large number of – often unknown – potential interviewees. For this study, the questionnaire was sent out only to the 24 participants who has already been interviewed for this study.
As discussed above and in section 3.2.4.1, the characteristics of structured questionnaires and semi-structured interviews are deemed most suitable to achieve the research objective. Qualitative research in general, and this approach in particular, leads to active engagement with the interviewees to gain rich insights into their understanding and views. Research in general and qualitative research in particular is subjective (Bryman, 2001) and contextual (Qu et al., 2011; Holliday, 2002) in nature. It is, like any other research, generally biased to a certain degree. The bias is often unconscious and may come from various directions such as the researcher’s personal interest, culture background or political orientation, and consequently his/her research topic, research methodology and research questions (Gomm, 2008). This research is not different. For example, the number of different valuation and reporting models and the variety of different single intangibles-related elements by nature cannot be complete, as described above. The selection of this subset compared to the possible universe is made in a manner such that the models and relevant elements should represent the most relevant models and elements in the best way. However, the latter includes a degree of judgement, which is always subject to the researcher’s background, as indicated above. In addition, when communicating and explaining to the interviewees the different intangibles-related models and elements, there may also be an element of educating them. Bryman (2001) refers to prompting as explained above. The interviewees only understand from what is explained to them, in writing (on the questionnaire) or orally when explaining to them the technical details of the different models and elements on the telephone. This process helps the interviewees to increase their understanding of the models and elements, but their understanding is increased along the lines of the understanding and explanations of the researcher. Although the researcher has kept the communication as neutral and objective as possible, a degree of personal influence may remain due to the researcher’s background, as described above. Therefore, the interviews allow entry into the perspectives of the interviewees (Patton, 2002), but those views are based on the models and elements and the way they are communicated to them and, therefore, their perspectives and responses accordingly may be influenced by the research approach and the way the questions, models and elements are communicated to them.
3.4.1.3 Sample selection and entering the field

All interviewees, who had participated in the previous interviews for this study (refer to section 3.2.4.2), were contacted again by email from October 2004 onwards. They were asked whether they could participate again as a follow-up to the previous interviews. The questionnaire was attached to the email. A brief explanation of how to complete the questionnaire was provided. As the response rate was very low within the first two weeks, all interviewees were recontacted by phone. One interviewee, B5, had changed his position, but he could be identified through the company’s directory. Finally, all interviewees were reached and they were kindly asked to return the completed questionnaires. It was also agreed that the interviewer/researcher would contact them again by phone after 2–3 weeks to ensure complete understanding.

In a few instances, discussions were made on other factors and approaches that were not chosen by the respective interviewees. This was driven by questions from interviewees with regard to the applicability, use in practice and relevance of those models. However, this part was not the aim of the research study. No conversations were taped, as they were only intended to assist the interviewee in the case of problems encountered and to ensure that the questionnaires were properly completed. The purpose of these short telephone conversations was to mitigate the risks that might arise from using self-completion questionnaires as described above.

All questionnaires were received back from interviewees by email, either as completed Microsoft Word documents or as an Adobe PDF. Adobe PDFs were used when the questionnaire was completed in handwriting. This was particularly true for CFOs. All questionnaires were finally received back and registered by March 2005.

3.4.1.4 Method of Data analysis

The data analysis for this part of the research is relatively straightforward in comparison with the previous analysis of the semi-structured interviews and their respective results. The answers to the questionnaires were transferred to Microsoft
Excel spreadsheets for a structured summary. Table 3.7 was prepared and used for all answers on Q_4.2.

Table 3.7: Excel template for structured summary of Q_4.2

<table>
<thead>
<tr>
<th>Indicator/Approach</th>
<th>C1</th>
<th>…</th>
<th>F1</th>
<th>…</th>
<th>B1</th>
<th>…</th>
<th>A1</th>
<th>…</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. … (e.g. knowledge indicators)</td>
<td>1 - 5</td>
<td>…</td>
<td>…</td>
<td>…</td>
<td>…</td>
<td>…</td>
<td>…</td>
<td></td>
</tr>
<tr>
<td>13. … (e.g. knowledge reporting approach)</td>
<td>…</td>
<td>…</td>
<td>…</td>
<td>…</td>
<td>…</td>
<td>…</td>
<td>…</td>
<td></td>
</tr>
<tr>
<td>23. Other information and/or indicators as regarded to be useful by interviewees?</td>
<td>Indicator/Approach description</td>
<td>…</td>
<td>…</td>
<td>…</td>
<td>…</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As interviewees ordered the importance of these different factors and approaches by themselves through Q_4.3, the core part of the questionnaire was in the second question. The answers are summarised in Table 3.8.

Table 3.8: Excel template for summary of responses on Q_4.3

<table>
<thead>
<tr>
<th>Model choice Interviewees</th>
<th>1. Choice (Model No.)</th>
<th>2. Choice (Model No.)</th>
<th>3. Choice (Model No.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company (C) 1</td>
<td>1 - 23</td>
<td>…</td>
<td>…</td>
</tr>
<tr>
<td>Company (C) …</td>
<td>…</td>
<td>…</td>
<td>…</td>
</tr>
<tr>
<td>Bank (B) 1</td>
<td>…</td>
<td>…</td>
<td>…</td>
</tr>
<tr>
<td>Bank (B) …</td>
<td>…</td>
<td>…</td>
<td>…</td>
</tr>
<tr>
<td>Investor (F) 1</td>
<td>…</td>
<td>…</td>
<td>…</td>
</tr>
<tr>
<td>Investor (F) …</td>
<td>…</td>
<td>…</td>
<td>…</td>
</tr>
<tr>
<td>Auditor (A) 1</td>
<td>…</td>
<td>…</td>
<td>…</td>
</tr>
<tr>
<td>Auditor (A) …</td>
<td>…</td>
<td>…</td>
<td>…</td>
</tr>
</tbody>
</table>

Except for model 23, which is an individual suggestion by an interviewee, all choices could be directly related to a suggested factor or approach in the literature through the questionnaire. Model 23 has to be treated individually and exceptionally. It is very likely that many different models are behind “model 23” in contrast to the other model numbers, which are uniquely connected to a specific factor or approach, i.e. there exists only one model for one model number. The reasons for the models being chosen as most important (Q_4.4) are summarised in Table 3.9.
It should be noted that the ranking is based on an ordinal scale, i.e. the models can be rank ordered, but the distance between the choices is not equal, as it cannot be measured in statistical terms (Bryman, 2001). In this context, it should also be noted that the first choices of two interviewees may have different levels of importance. For example, one interviewee could allocate 95 of 100 points to the first choice, whereas another would only allocate 60 of 100 points to his/her first choice. Furthermore, all interviewees are implicitly equally weighted. A metric scale, i.e. an interval scale that allows us to calculate the difference between two categories, would not have improved the research result for the following reasons:

- The application of an interval scale, e.g. from 0 to 100 points, is highly subjective, as every interviewee assesses high importance differently. For example, high importance could mean 75 points to one respondent and 95 points to another. Does the distance between 75 and 95 reflect objectively the different importance or only the different attitudes and mindsets about importance of the different respondents? Any kind of metric scaling of “importance” in this context would be highly subjective and, therefore, less reliable.

The overall research objective is to develop an intangibles valuation and reporting model based on the intangible factors and approaches identified in the course of the empirical research. To be as accurate as possible, but at the same time to avoid the appearance of reliability through metric scaling, which lacks de facto reliability as discussed before, the three different choices for each respondent were counted as such. No comparisons or differences between interviewees were drawn. Only the number of selections of a specific model

<table>
<thead>
<tr>
<th>Model choice</th>
<th>1. Choice (Model No.)</th>
<th>2. Choice (Model No.)</th>
<th>3. Choice (Model No.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviewees</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Company (C)</td>
<td>1</td>
<td>…</td>
<td>…</td>
</tr>
<tr>
<td>Company (C)</td>
<td>…</td>
<td>…</td>
<td>…</td>
</tr>
<tr>
<td>Bank (B)</td>
<td>1</td>
<td>…</td>
<td>…</td>
</tr>
<tr>
<td>Bank (B)</td>
<td>…</td>
<td>…</td>
<td>…</td>
</tr>
<tr>
<td>Investor (F)</td>
<td>1</td>
<td>…</td>
<td>…</td>
</tr>
<tr>
<td>Investor (F)</td>
<td>…</td>
<td>…</td>
<td>…</td>
</tr>
<tr>
<td>Auditor (A)</td>
<td>1</td>
<td>…</td>
<td>…</td>
</tr>
<tr>
<td>Auditor (A)</td>
<td>…</td>
<td>…</td>
<td>…</td>
</tr>
</tbody>
</table>

*Table 3.9: Excel template for summary of reasons for model choice*
counted. Focus was laid on the first choice of each respondent, but all other choices were also considered in the model development. The detailed ordering, which was ordinal in nature, is discussed in the next chapter. However, to overcome this issue, an approach was chosen so that all the factors and approaches proposed by respondents through their three choices will be components of the intangibles valuation and reporting model developed. All factors and approaches not considered and therefore not incorporated finally were analysed and discussed individually in order to ensure that they are not relevant for the majority of participants.

### 3.4.2 Results and discussion

Based on the results of the first set of interviews as discussed in section 3.3, a follow-up questionnaire with a list of different intangible valuation and disclosure models was sent to the interviewees. Table 3.11 provides an overview of the three most relevant models chosen by interviewees. The table shows the answers from interviewees’ perspectives.
No interviewee made his or her own suggestions. All selections were based on the factors and approaches provided to them. As it is more interesting and useful to analyse which of those models are most often selected as important by interviewees (Q_4.3), Table 4.4 was prepared from a model perspective.

<table>
<thead>
<tr>
<th>Interviewee</th>
<th>1st Choice (Model No.)</th>
<th>2nd Choice (Model No.)</th>
<th>3rd Choice (Model No.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company (C)</td>
<td>1</td>
<td>4</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>4</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>21</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>3</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>13</td>
<td>21</td>
</tr>
<tr>
<td>Bank (B)</td>
<td>1</td>
<td>21</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>11</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>4</td>
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Table 3.10: List of three most important models by interviewee
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<tr>
<th>Model (No.)</th>
<th>Choices by group of constituency</th>
<th>1st Choice (total)</th>
<th>2nd Choice (total)</th>
<th>3rd Choice (total)</th>
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Table 3.11: Ranking of model choice including breakdown by interviewee group
Model 21 refers to the valuation of intangibles using a DIC method. As explained above, this approach focuses on measuring the value of knowledge assets by first identifying their various components and then directly evaluating them. Components of intellectual capital such as market assets (customer loyalty, etc.), intellectual property (patents, etc.), technology assets (know-how, etc.), human assets and structural assets (information systems, etc.) are all measured and then the total value of a company’s intangibles estimated derived from the single values. This method is mainly associated with the approach suggested by Reilly and Schweih (1998) and requires the identification and measurement of all single intangibles beyond the financial accounting standards requirements such as IAS 38 and IFRS 3.

The great interest of interviewees in model 21 seems to be surprising. This model refers to the same principles as accounting standards setters use for the financial statements, i.e. each intangible must be identified on an individual basis and then measured in accordance with the regulation. The key difference between most DIC methods (refer to section 2.2.2) and the regulation from financial accounting standards setters (refer to section 2.2.1) is the interpretation of the qualitative criteria ‘reliability’ as referred to by IASB (2010).

This finding reconfirms the findings from the first part of the empirical research, where it is shown that interviewees consider reliability to be an important qualitative characteristic for financial information, but not to the same degree that financial accounting standards setters do. Therefore, financial accounting standards setters should re-deliberate on the hierarchy of the qualitative characteristics of financial information. They should at least review the current interpretations relating to the qualitative characteristics of financial information and align them with the views and needs of financial statements users (refer to sections 2.2.1.2 and 3.37).

Many authors in the literature such as Sveiby (1998; 1997) and Sullivan (2000) propose alternative SC methods, as they believe that such DIC models are not useful. The latter is explained by the fact that the identification of individual intangible elements is already challenging, but measuring them in terms of monetary quantities, particularly their interactions, is not possible in a reasonable manner. However, this
view is not shared by interviewees. They seemed to be very aware of the uncertainty surrounding the valuation of intangibles, but they still have a strong preference to receive such information. Expressed in measurement terms as discussed in section 2.3, financial statements users seem to wish to receive granular intangibles related information already transformed into monetary values compared with, for example, SC methods related information. SC methods related information has to be transformed by financial statements users to finally ascertain a monetary value. The problem for them is probably that they do not have their own transformation functions that are meaningful from their points of view.

Model 4 refers to a variety of different information about customers. The primary reason for Model 4 was the high relevance of customers for the business of companies. As also stated, a product or service is of value if customers are willing to pay for it, i.e. ultimately, customers are crucial for the value and success of a company.

Many authors have emphasised the importance of customer-related information, whether in the context of an overall intangibles disclosure model such as proposed with the SC methods (refer to section 2.2.2) or with a single view on customer value. However, no empirical research proves the claim of the literature that such information is not only useful, but is also regarded as one of the most important for financial statements users.

This finding might not be surprising as customers are the direct source from which companies create their revenue streams and receive their cash inflows. They are a kind of direct business sponsors of companies. As they are so important for companies, financial statements users wish to receive all relevant information relating to them.

Model 13 refers to information requirements about how a company plans to achieve its strategic objectives through its intangibles capital (i.e. objectives and strategies linked to different intellectual assets/components of intellectual capital and linked to a company’s prospective financial budget).
This type of model is similar to the various proposed SC methods. It is interesting to recognise that interviewees have no clear ‘either/or’ view on these different methods, i.e. they do not believe that there is only one prevailing method towards intangibles disclosure. It is obvious that they wish several different approaches to capture the useful information relating to intangibles. It seems that the literature shows a too narrow view and that it disregards the need for a more holistic methodology by combining various different methods towards an enhanced and commonly accepted IDF model. This result is new and it might be at least one of the reasons why the development of intangibles is still in its infancy and why no common approach has been identified yet.

Model 11 relates to more detailed and coherent information about a company’s value chain and a description of how the company manages it (e.g. supported by key performance indicators). Model 11 was chosen as the intangibles of a company’s value chain would make it easier for constituencies to evaluate a company’s potential for future success. This would make it possible to understand in more detail the different stages of the value chain including any single component not currently presented in the financial statements.

Except for a few authors such as Green (2006a; 2006b), Allee (2008) and Solitander et al. (2010), this particular piece of information is not discussed as decision-useful. Hence, this finding confirms the views of those authors who emphasise the value relevance of such information for external stakeholders. It also confirms the need for a more holistic view of intangibles disclosure.

As already indicated by some interviewees in the first round of (semi-structured) interviews (refer to sections 3.3 and 3.4), they would prefer to see how a company plans to achieve its strategic objectives using its intangible capital, i.e. objectives and strategies linked to different intellectual assets/components of knowledge and linked to the company’s prospective financial budget (Model 13). As they added, it would also be very useful to know what kinds of components are linked in what manner to a company’s objectives, future cash flows and success. It would also be interesting to recognise that some of them, especially banks and fund managers, are interested in knowing the future cash flows from such components.
Model 3 refers to a variety of information needs about intellectual property rights. The main reason for Model 3 was that this is a key current value of the company that can be easily traded with other companies and that is the underlying resource of any further work of the company.

Model 22 refers to the FiMIAM model explained in the literature review. It is set up in six steps: (1) determining the “realised intellectual (or intangible) capital” that could be the difference between the book value and the market value, (2) identifying the relevant components of intangibles, (3) assigning relative weights to intangible components, (4) justification of the coefficients, (5) assigning values and (6) a new “market bottom line” is created by adding these intellectual capital values to the firm’s book value.

Some interviewees chose Model 22, which provides quantitative results for such components in more detail based on the company’s market value, provides more information about the company’s market value and explains how this can be derived from the company’s resources.

Overall, these results confirm some of the observations made in the first part of this empirical research. However, more importantly, they also indicate that financial statements users have different needs compared with those described in the literature. They prefer a more holistic view of the subject of intangibles.

What has already been found in the first part of the empirical research is that financial statements users have a different understanding and interpretation of reliability compared with financial accounting standards setters (section 3.3.7). The above results not only indicate what financial statements users would particularly prefer to see in an enhanced IDF model, but they also show that such users desire a holistic view of a company’s intangibles resources based on and with verifiable information. The information relating to this holistic view does not need to be perfectly reliable but rather verifiable, which seems to make the information reliable from the understanding of stakeholders (refer to sections 3.3.7 and 3.3.8). The remaining models are not discussed further here as they showed less relevance for financial statement users.
3.5 Summary of components identified for a new IDF model

The second research objective is thus partly fulfilled, i.e. useful factors have been identified. In the first step, those factors were identified through the re-analysis of the semi-structured interviews, i.e. they were systematically extracted from the semi-structured interviews based on ground theory-related data analysing methods (refer to section 3.3.9). In the second step, they were identified from the developed questionnaire about the different currently suggested intangibles valuation and reporting models and the respective element thereof (refer to 3.4). Table 3.12 summarises the results, i.e. the components and minimum requirements identified from the semi-structured interviews of the first step (refer to table 3.6, section 3.3.9).

<table>
<thead>
<tr>
<th>Respondents having indicated the relevant component</th>
<th>IDF Model components</th>
<th>Considered in IDF Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1, C4, C5, C6, B1-B6, F4-F6, A1, A2, A3, A4, A6</td>
<td>• The model should provide more forward looking information (including a 3-5 year budget and a literal description of company’s future development)</td>
<td>✓</td>
</tr>
<tr>
<td>C1, B2, F1, F4, A2, A6</td>
<td>• In order to make FS not more complex and less understandable, the rationale and further detailed discussions of that model should be presented in a separate footnote/section at the end of the FS.</td>
<td>✓</td>
</tr>
<tr>
<td>A1-A4, A6, C1, C3-C6, B1-B6, F1-F6</td>
<td>• The model has to include future cash flows and revenue streams</td>
<td>✓</td>
</tr>
<tr>
<td>A3, A4, A5, A6, C1-C6, B2-B5, F1-F6</td>
<td>• To be reliable, the model has to be clearly, at a minimum, verifiable, comparable and consistently applied</td>
<td>✓</td>
</tr>
<tr>
<td>C2, C4, C5, B3, B6, F1, F4</td>
<td>• Quantitative measures are preferred</td>
<td>✓</td>
</tr>
<tr>
<td>B1, B2, A3, C5, F3-F6</td>
<td>• Information and measures should be linked to company’s strategy and objectives (as well as to the general planning and budgets of the company)</td>
<td>✓</td>
</tr>
<tr>
<td>B1, B3</td>
<td>• Describing more about managerial tools esp. Planning, budgeting and controlling tools</td>
<td>✓</td>
</tr>
<tr>
<td>B1, F4, F6</td>
<td>• More detailed description of last years development</td>
<td>✓</td>
</tr>
<tr>
<td>B1, C3, C4, C5, B1, B3, B6, A6, F1, F2</td>
<td>• Should be audited</td>
<td>✓</td>
</tr>
<tr>
<td>B1-B4, B6, F1-F6, A1, A2, A3, A5, A6, C1-C4, C5, C6</td>
<td>• Describing more about value drivers (and value added chain)</td>
<td>✓</td>
</tr>
<tr>
<td>C1-C4, C5, B2-B5, F1-F3, F6, A3, A4, A6</td>
<td>• One common set of accounting principles</td>
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</tr>
<tr>
<td>B2, F2, F5</td>
<td>• Clear presentation of Financial Statements in general and of all risks and rewards of a company specifically</td>
<td>✓</td>
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<tr>
<td>F3, F4, F6</td>
<td>• More detailed segment reporting</td>
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<tr>
<td>C1, C5, C6, F4, F5, F6, F6</td>
<td>• More information (past and future) about products</td>
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<tr>
<td>F6</td>
<td>• Details information about products and segments should be provided over a period of several (past and future) years</td>
<td>✓</td>
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<tr>
<td>F1-F6, C1, C3, C6, B3, B4, B5, A3-A6</td>
<td>• Objectivity, Reliability</td>
<td>✓</td>
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<tr>
<td>A2, B6</td>
<td>• Common definition of knowledge</td>
<td>✓</td>
</tr>
<tr>
<td>C2, C3, C5, B1-B4, F5, A1, A3, A4, A5</td>
<td>• Know-how of employees &amp; management quality</td>
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<td>• More information in Financial Statements per line item</td>
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<td>• More information about business and economic risks and rewards</td>
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<td>• More financial ratios</td>
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<td>C6, B1, B5, F6, A3</td>
<td>• Less accounting choices</td>
<td>✓</td>
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<tr>
<td>C2</td>
<td>• Clear definitions of terms used in Financial Statements</td>
<td>✓</td>
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Table 3.12: Components extracted from semi-structured interviews for new IDF model
Table 3.13 re-summarises the results from the structured interviews as discussed in section 3.4 (with reference to the different constituencies).

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<td>C3, B3, F3, F5</td>
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Table 3.13: Components extracted from structured interviews for new IDF model

Similar to the first step of the identification of model components (table 3.12), only the three most often referred to knowledge valuation and reporting elements from the questionnaire (Models 21, 4 and 13) and to a limited extent elements from other approaches (Models 2, 3, 6, 10, 11, 17 and 22) are considered in the new IDF model.

Chapter 4 laid down, with the various components described above, the fundamentals for the new IDF model. The new IDF model is developed in the next chapter (chapter 4). It is then validated with constituencies and a financial accounting standards setter to validate its general acceptance (chapter 5).
Chapter 4 – Building a new IDF model

4.1 Introduction

The previous chapter introduced the theory of CondNAT that underlies this research. Several constituencies were interviewed. The analysis of the findings showed that constituencies need better information about companies’ intangible resources. These constituencies were also asked to provide insights into what they would like to receive as intangibles related information from a company.

Several intangibles related information requirements were identified throughout and systematically extracted from the interview transcripts as relevant components for a new IDF model (section 3.3.9). To further specify the particular needs of financial statements users relating to intangibles related information, various types of intangibles disclosure models including different valuation and reporting approaches and related elements were validated with constituencies (section 3.4). Both research parts establish the building blocks of the new IDF model (refer also to section 3.5) developed in this section.

As the new model is based on the identified needs and requirements of financial statements users, this model can also be regarded as a user-based normative disclosure framework. Such an approach in developing normative theory is new and thus it contributes to CondNAT (refer to sections 3.1 and 3.2.1).

However, the literature does not provide or even indicate a construction plan to build an IDF model in relation to the development of CondNAT. The only principle inherent to the development of CondNAT is that the model should be developed based on empirical research; it should be derived directly from the needs and requirements of financial statements users as discussed in section 3.2.

Therefore, it is necessary to complement the theoretical structure to organise the empirical findings after the first part of the empirical research (chapter 3). In particular, those findings relating to the identified components and qualitative characteristics such a model should meet should be considered and combined in an appropriate manner. Section 4.2 introduces general model building theory. It
describes what a model is and how models are developed in social sciences as well as for financial accounting standard purposes. It also establishes the fundamental principles to organise the model development process.

Along with these general principles, the new IDF model is developed. Section 4.3 describes the IDF model development process as well as the model itself. By developing a new IDF model, this research contributes to current research in three distinct ways:

- It provides a specific IDF model that is derived from the needs and requirements of those who finally use it – financial statements users.
- It contributes to the establishment of a new branch of financial accounting theory, so called CondNAT, which consists of financial accounting norms and policy recommendations developed through the application of qualitative empirical research methodologies.
- It provides a process by which the concept of CondNAT can be operationalised in research practice.

4.2 Principles of model building in social sciences and financial accounting

4.2.1 General theory of model building

Models can mean different things. They commonly refer to terms such as physical objects, fictional objects, set-theoretic structures, descriptions, equations or combinations of these (Frigg et al., 2006). Such models share a common feature: they represent and denote a target system that is something from the real world (Elgin, 2010; Russell, 1968).

Physical objects are also referred to as material models, which comprise anything that is physical and that are used for the scientific representation of something else in real nature. Examples are models of bridges, planes and cars. Fictional objects are non-physical and abstract entities (Frigg and Hartmann, 2006; Giere, 1988). They are
rather in the scientist or user’s mind. They do not need to exist physically to perform their representation function (Frigg and Hartmann, 2006).

Set-theoretic structures, sometimes also referred to as state-space structures or mathematical models, are closely related to mathematics related sciences. Equations are another type of model, which are also referred to as mathematical models. They follow the rules for mathematical equations (Frigg and Hartmann, 2006). Models referred to as descriptions are stylised descriptions of a target system that is the (real) world one is interested in (Frigg, 2010).

There are many other models such as probing models, development models, study models and heuristic models, which do not represent a target system, i.e. anything in real nature, and therefore these are strictly speaking not regarded as models as described above. Their purpose is rather to test/validate and study theoretical tools, which are later used for the kinds of models described above (Frigg, 2010).

Models are different to theory, even though these terms are often used interchangeably. Models can also be seen as a pre-state theory that asserts a proposition that is not yet proven to be correct or generally accepted, whereas something is called theory if it has already acquired a degree of general acceptance (Frigg and Hartmann, 2006).

The so-called syntactic view of theories also differentiates models from theories. The syntactic view regards theory as a set of sentences in a system based on axioms and rules of inferences. Theories are deemed as linguistic entities providing a description of a theory’s subject matter. Within such an approach, the term model is used in two ways: (i) where a model is only a system of semantic rules that interpret an abstract and formal calculus that contains logical and non-logical terms and (ii) where the study of a model is concerned by the in-depth analysis of a scientific language. Logical terms are provided by the formal apparatus and are taken for granted in respect to empirical science, whereas non-logical terms provide the empirical context of a theory. The essential problem with this approach is the relation of language to reality, i.e. that scientific theories are descriptions of their subject matters expressed in a concise formal language (Frigg and Hunter, 2010; Frigg and Hartmann, 2006; van Fraassen, 1980; Nagel, 1961; Braithwaite, 1953).
Owing to these problems and related criticism of the syntactic view, the so-called semantic view of theories emerged. According to the semantic view, a theory is a family of models that are the central unit of scientific theorising. Within this view, models establish theory and they are constructed as non-linguistic entities (Frigg and Hunter, 2010; Suppe, 1989; Giere, 1988; van Fraassen, 1980).

The key differences between the syntactic and semantic views are the following (Frigg and Hunter, 2010):

- the semantic view assigns models a central role in science; and
- the semantic view emphasises the non-linguistic character of models, leading to a different view of scientific representation.

One key question relating to the semantic view of theories is how something non-linguistic can represent something of the real world, or in other words, how does a model represent its target system? There are generally three groups with different views on this issue. These different views are a mathematical, a mimetic and a conventionalist view.

According to the mathematical view, models are mathematical structures that represent their target systems in an isomorphic relationship. Mathematical structures are certain sets of objects or ordered tuples of a domain that enter into a distinguished relationship or that can be expressed as one-to-one functions between domains. The objects have no particular meaning and property at inception and the relationship between the different sets of objects is stipulated without determining what the relation itself is (Frigg and Hunter, 2010; Hellman, 2005).

The mimetic view takes models as idealised objects, i.e. models that represent their target systems only by being similar to them in certain respects, degrees and properties. Such models are different to mathematical structures, as they do not require isomorphic relations but rather similarity in a certain manner. Such models ‘mimic’ reality (Frigg and Hunter, 2010; Giere, 1988; Giere, 2004; van Fraassen, 2004).

The conventionalists’ view is different: they postulate a conventional stipulation as the core of representation, i.e. a voluntary and perhaps even arbitrary act of
stipulation is involved in making something represent something else (Frigg and Hunter, 2010; Toon, 2010; Goodman, 1976).

Apart from these three main classes, there are also other views of what models are or might be (see, e.g., Cartwright, 2010; Chakravartty, 2010; Toon, 2010; Cartwright, 1983; Morgan and Morrison, 1999; Morrison, 1998; Morgan, 1997). These are not discussed here further.

As described in the following discussion, a model must represent its target system. A model generally consists of different elements such as a model structure and a hypothetical system including their respective descriptions and representations. A hypothetical system is often referred to as a model system.

Modelling in science can be divided into two sub-activities: the analysis of what models and particularly model systems are and how they are used to represent something that is beyond themselves. Modelling or model building generally refers to the activity of devising, describing and using a model, particularly a model system (Frigg, 2010).

The following figure from Frigg (2010) provides an overview of the different elements of scientific modelling, which includes devising, describing and using a model system (Frigg, 2010). This structure is considered in the building process of the new IDF model (Figure 3.5).
The different elements are explained from right to left.

The **Target System** refers to the parts or aspects of the real world a model developer or scientist is interested in. A **Model System** is a system that does not exist in the real world, but that is used as an object of study. It is also referred to as a hypothetical system. Smith (2007, p. 135) uses the name ‘model land’ for the hypothetical system. Such hypothetical systems are chosen as they are easier to study and to derive results from compared with the Target System. Furthermore, a hypothetical system represents its Target System, which allows us to draw inferences and to carry over results from the hypothetical system to the Target System and thus enables and facilitates learning about a Target System by studying the hypothetical system as a ‘model’. Hence, a hypothetical system should t-represent the ‘Target System’ of interest, as it is referred to in the figure above (Frigg, 2010, p. 98).

A Model System t-represents its Target System. Such a **T-Representation** cannot be done by a mathematical structure such as isomorphism, homomorphism or alike, as such systems need two structures, i.e. one structure that represents another structure, but a Target System is not a mathematical structure in this sense. The T-
Representation establishes and provides an understanding of a relation between the fictional scenario, i.e. the hypothetical system and parts or aspects of the real world.

In general, a T-Representation establishes a key that allows a translation into the facts and meanings of the Target System. The general T-Representation should satisfy the following conditions (Frigg, 2010):

A Model System X should t-represent a Target System Y if and only if:

1) X denotes Y
2) X has a key K that specifies how facts about X are to be translated into claims about Y.

This is the general form of an account of T-Representation. However, in every particular case this general form has to be concretised, i.e. a particular denotation and a particular key is required (Frigg, 2010).

In the majority of cases, the key has the character of a proposition, which means it is hypothetical, tentative or conjectural at this stage. Hence, this hypothetical character is different to Giere’s theoretical proposition used to express the similarity of a model to its target in a specific way (Giere, 1988). With the proposition, an expectation about the model is stipulated, i.e. that the Model System bears a certain specified relationship to its Target System. This claim is then validated against the best available background knowledge using commonly accepted methods of scientific investigation. However, how exactly this validation is carried out and what methods are used depends on the details of the representation (Frigg, 2010). Generally, the key specifies how facts about the Model System X are translated into claims about its Target System Y.

According to Frigg (2010), the definition of a T-Representation has to consider misrepresentation. A misrepresentation is a T-Representation that is not a faithful T-Representation, whereas a faithful T-Representation is established if all claims about the Target System Y are true. A misrepresentation is different to a failure of representation. A misrepresentation still meets the two conditions of general T-Representation even though not all claims about the Target System are true. Compared with a misrepresentation, a failure in representation means that at least
one of the two conditions of general T-Representation has not been met. Failure in representation does or does not exist, i.e. a kind of “yes/no” situation, but misrepresentation comes in degrees (Frigg, 2010).

Most (hypothetical) models (Model System) t-represent inaccurately, incorrectly or unrealistically the Target System in some way, sometimes deliberately, sometimes unintentionally, but this might be acceptable to certain degrees and depending on the context (Frigg, 2010; Toon, 2010). This means that misrepresentation rarely occurs in a clear “right/wrong” way, but rather in a may/may not be acceptable mode.

Such problems relating to a key in a T-Representation do not appear if representations are arbitrarily stipulated, as proposed by Callender and Cohen (2006). However, scientific stipulation would contradict the objective of studying a Model System X to learn something about the Target System Y that is not already known. A scientific stipulation would not deliver the key that allows the translation of the properties of the Model System into claims about the Target System (Frigg, 2010; Toon, 2010). Hence, this might be acceptable if the Target System is directly subject to scientific investigation, but it does not seem to be reasonable for a representation of a Target System and, therefore, a T-Representation as described above would be needed.

There are different types of general keys available. Two examples of such keys are “identity” or “ideal limits”, which are often used in science (Frigg, 2010). Other keys are not discussed here, as a general discussion about keys is beyond the scope of this thesis.

The key “identity” refers to the rule that ensures that facts, or classes of facts, in the Model System are also facts, or classes of facts, in the Target System, i.e. if the Model System X t-represents the Target System Y by identity, the facts of the Model System X are also facts of the Target System Y (Frigg, 2010).

The key “ideal limit” is used for many Model Systems, which are idealisations of the Target System in a certain manner. In order to be valid idealisations, two properties have to be fulfilled: experimental refinements and convergence. Experimental refinements refer to the possibility, in principle, of refining actual systems, Target
Systems, in a manner that they approach the Model System, i.e. that the ongoing experimental refinements lead to a sequence of systems that come closer and closer to the limit. Convergence refers to the behaviour of the sequence of experimental refinements: the closer the real situation, i.e. the properties of the Target System, comes to the ideal limit, i.e. the properties of the Model System, the closer the behaviour of the Target-Model has to come to the behaviour in the ideal limit, i.e. the behaviour of the Model System, which also means that the accuracy of the prediction of the Model System increases (Laymon, 1991; Rohrlich, 1989). If a Model System is an ideal limit, this implies a key for the T-Representation (Frigg, 2010).

The box “**Model Description – Text serving as a prop**” indicates that Model Systems are typically presented by descriptions. These descriptions are understood as props in a game of make-believe (Frigg, 2010). A prop is a particular object that prompts us to imagine something with a particular reason, whereas the particular reason is an imposition of a rule prescribing what is to be imagined as a function of the presence of this object (Walton, 1990). If someone imagines something by the presence of a prop (i.e. he/she is prompted to imagine something by the presence of an object), he/she is engaged in a type of game of make-believe, which means he/she is pretending (which should be distinguished from deception) (Walton, 1990). If a prop results in starting imaginations based on some predefined rules, it becomes a prompter. Prompters are different to props. If a prop does not trigger any imagination, it does not become a prompter, but remains a prop. On the other hand, objects can prompt imaginations without being part of a game of make-believe, i.e. without being a prop (Frigg, 2010).

Rules of games can be either set on an ad-hoc basis (e.g. if someone spontaneously imposes a rule such as children often do in spontaneous games) or they are publicly agreed, which means they are deemed as rather stable (e.g. the story of Hamlet and Sherlock Holmes are types of publicly agreed rules). Ad-hoc rules are also called “unauthorised” rules, whereas publicly agreed rules are “authorised” rules. Hence, props generate fictional truths through their features and imposed rules, whereas

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75 Pretending refers to pretense theory (refer to Walton, (1990), Currie (1990) and Evans (1982)), which will not be discussed further here.
fictional truth is again generated either directly or indirectly. Directly generated truth, also called primary truth, follows immediately from the props. By contrast, indirectly generated truth, also called implied truth, is derived from the props by rules of inferences (Frigg, 2010).

In should be noted that “Model Description – Text serving as a prop” has to be understood in its widest sense, i.e. it comprises verbal, linguistic descriptions, but also non-linguistic descriptions such as drawings, sketches, pictures and diagrams of a specific Model System (Frigg, 2010).

The “P-Representation” establishes the representation of the Model System by the Model Description. A P-Representation is defined as a prop in an authorised game of make-believe (Frigg, 2010).

A Model System is different from its Model Description; the Model Description p-represents its Model System. The Model Description is rather verbal (or non-verbal as indicated above) and only states the fact of the Model System under consideration. Facts and properties are inferred from the Model System, which are not stated by and are not part of the Model Description, as explained above.

A Model System is used to find out what is true in this system instead of knowing only the specified properties mentioned as part of the description. It should allow establishing an understanding of whether certain claims about the Model System hold true or not and it should help gain a further understanding of properties not stated in the Model Description (Frigg, 2010).

The two boxes on the left of the figure above, Model Equation and Model Structure, belong to the discipline of the application of mathematics to Model Systems. The Model Structure, sometimes also called “mathematical structure” or “set-theoretic structure”, is applied to the Model System, which is essentially an imagined physical system, i.e. as hypothetical entities that have non-structural properties (Frigg, 2010). A Model Structure is a composite entity consisting of a non-empty set A of individuals (sometimes also called a domain, a universe or objects) of the structure B and a non-empty indexed set R of relations on A, which is sometimes formally written as an ordered triple, B=[A,R]. Individuals in this context can be everything,
i.e. they are placeholders or dummies. Relations are regarded as extensional
caracterisations between individuals that establish properties between individuals
such as transitivity, reflexivity and symmetry. As the Target System is not a
structure, but as Model Structures should be applied to other structures by connecting
them mathematically through, e.g., isomorphism, homomorphism or other similar
mathematical structures, a Model System is needed in between the Target System
and the Model Structure. In this way, it plays the role of a kind of mediator (if we
assume that the Model Structure relates to theory, the Model System would play the
role of a mediator in the sense of Morgan and Morrison (1999), Morgan (1997) and
Cartwright (1983) as explained above).

It is obvious that different approaches exist relating to constructing models such as
(Frigg, 2010):

- Deriving a Model Structure from a Model Equation or other related formal
description and then working forward towards a Target System;
- Deriving a Model System from a Model Description and then working towards a
Target System and a Model Structure;
- Deriving a Model System from a Target System and then working backwards to
the Model Description and Model Structure;
- Connecting back a Model System based on a Model Structure to the Target
System.

Two of these approaches are mainly applied in social sciences: either a Model
System is connected back to (deductive research) or a Model System is derived from
the Target System (inductive research). Further details are discussed in the next
section.

4.2.2 Model building and empirical research in social sciences

As described in the previous section, a Model System t-represents a Target System,
parts or aspects of the real world. A mathematical structure used in the course of
scientific modelling is a Model Structure rather than a Model System itself.
As described in section 3.3, the conduct of empirical research in social sciences can be generally based on two different orientations, which are referred to as quantitative and qualitative research strategies. Another view of empirical research in social sciences is the orientation of the role of theory in relation to research, which can be generally distinguished into inductive and deductive.

The deductive orientation refers to testing/validating theory. In respect to model building, it generally means that a Model System, and perhaps its related Model Structure, should be validated on the Target System.

The inductive orientation refers to deriving theory from facts or a certain domain. In respect to model building, it generally means inducing a Model System, and perhaps subsequently a related Model Structure, from a Target System.

It is often the case that the Target System itself is not or cannot be used directly for inductive- and deductive-oriented research due to its complexity or non-accessibility. Hence, some sort of extraction of it, which is termed here the ‘Extraction System’, is used as a representation of the Target System; this representation is termed ‘E-Representation’. This denotation is consistent with the description and denotation in the section before\(^76\). The following figure is adapted from Frigg (2010, p. 121) by including the Extraction System, the respective E-Representation, the Extraction Description and its respective ED-Representation, similar to the P-Representation.

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\(^76\) Adapted from Frigg (2010).
Frigg (2010, p. 109) uses the term ‘data model’ instead of Extraction System. Data are gathered in experiments. They are raw data before they are treated (e.g. cleansing, rectification and regimentation). The end result of the treatment is the data model (Frigg 2010). As he has physical experiments in mind where raw data are gathered, treated in different ways to fit them into a specific mathematical formula that satisfies certain theoretical conditions (e.g. minimum least squares-distance, etc.) and finally a data model is obtained as a result of this process, he refers to the term 'data model'. From his point of view, data models play (only) an evidential role. Data models highlight the existence of certain phenomena, but a data model does not constitute or replace a Target System. These models are highly contextual to the experiment from which they are gathered compared with Model Systems (Frigg, 2010). As science is about phenomena in the real world and not about data, even though data models help understand and provide evidence for certain phenomena (Frigg, 2010; Teller, 2001; Woodward, 1989; Bogen and Woodward, 1988), Model
Systems do not represent data models\textsuperscript{77}. As a result, Frigg has not incorporated data models as an element of modelling.

The term Extraction System is used here, as it is not limited to data. It includes any sort of data, facts and information extracted from parts or aspects of the real world (Target System) with a particular focus on certain issues and objects of investigation. Those extracted data, facts and information may come from experiments or artificial constructs of a Target System, which may include, for example, particular real regions and specific socio-culture environments. Similar to the data in data models, data, facts and information in an Extraction System are highly contextual. These contexts are often deemed as controllable and providing reliable information (Frigg, 2010). An Extraction System is incorporated in Figure 4.2, as it is an important and integral part of modelling, particularly in social sciences, through the abstraction of some aspects of reality (Bogen and Woodward, 1988; McCarthy, 1979).

As a result of the above discussion and integration of an Extraction System, Model Systems can be validated with Extraction Systems (deductive approach) and models can be developed based on Extraction Systems (inductive approach), as Extraction Systems can be viewed as representations of parts or aspects of the real world. If a model is derived from an Extraction System, it may need to be revalidated to ensure that the Model System \( t \)-represents faithfully, i.e. in a commonly accepted manner, the Target System.

An example of a research strategy with a deductive orientation could be the testing/validation of physical models in experiments, i.e. a Model Structure is applied to a Model System, which is validated in an experimental context (which is the Extraction System). An example of an inductive orientation could be if a particular group of people is selected and put into a rule-based framework tailored for a particular purpose in order to observe certain behaviours of participants. Another

\textsuperscript{77} Some authors such as van Fraassen (1980; 1989; 1997) and French (1999) believe that Model Systems represent data models rather than parts of the real world. This would allow them to establish isomorphic relationships between Model Structures and data models (via a Model System if the Model Structure or data model is not equal to the Model System) as data models are regarded as mathematical entities with a well-defined structure. This seems to be convenient and gives the impression of objectivity. However, the issue herewith is that structures have to be connected to the real world with the mediation of non-structural concepts. Any attempt to bypass it will certainly fail, as the connection to the real world is missing (Frigg, 2010; Bogen and Woodward, 1989).
example is semi-structured interviews used to derive theory. The rule-based framework with participants as well as the group of interviewees in their individual contexts can be regarded as Extraction Systems.

The Extraction Description should provide underlying details of the Extraction System similar to the Model Description. The ED-Representation is made up of the relevant properties and characteristics from the Extraction Descriptions. The E-Representation should generally comply with or to similar requirements as the T-Representation, i.e. a key should be established.

If such a key complies with the requirements of keys of a T-Representation, a Model System could be developed based on the Extraction System. The key for the E-Representation could then be concatenated with the key for the T-Representation, which would lead to a de facto direct representation of the Extraction System by the Model System. However, such cases might be very rare, difficult to achieve or subject to too high uncertainty due to the various non-structural concepts used. Therefore, induced Model Systems should be revalidated in order to ensure the representation of the Target System.

Furthermore, defining acceptable keys for E-Representation relates to the criteria of validity that are applicable for inductive and deductive research approaches even though the current literature on research methodologies does not distinguish explicitly between E-Representation, T-Representation and the requirements of the Model System to finally represent the Extraction System. However, a detailed analysis and development of keys for an E-Representation is beyond the scope of this thesis, but it should be subject to further research in the domain of model building theory.

The use of Model Systems and Extraction Systems is deemed as essential to learn about real-life situations (Cartwright, 2010), or, as in accounting, can help structuring real-life phenomena in order to make use of them in the real world again.

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78 For more detail on the debate about the acceptability of qualitative research strategies in social sciences and the measurement of acceptability by criteria developed for quantitative research strategies, refer to section 3.2.
In summary, model building is strongly associated with theory and research methodology, but it is not the same. Model building theory in social sciences particularly focuses on the Model System and how it represents a Target System. The analysis of Model Structures rather belongs to the mathematical domain, whereas the application of such models relates to applied natural or social sciences again. The literature on empirical research methodologies mainly refers to the T-Representation as well as ED- and E-Representations, even though these representations are not explicitly distinguished. Therefore, this section together with the previous section (section 3.5 provided the fundamental elements, complementary to the research designs described in section 3.2.4 and 3.4.1.1 as well as the related findings (sections 3.3 and 3.4.2), that have to be considered in developing a new IDF model as a Model System in social sciences. However, it still needs to be clarified whether there are any different or additional guidelines or requirements in financial accounting for developing a Model System such as the IDF model. This is discussed in the next section before the new IDF model is developed.

4.2.3 Model building in accounting

As explained in the previous section, this section describes how financial accounting models should be built. Accounting refers to the principles and practices of systematically recording, presenting and interpreting financial accounts (Webster’s New World College Dictionary, 1996). It can even be seen as the art of recording, classifying similar types of transactions and events generally expressed in monetary terms as well as interpreting the results thereof (Singh Wahla, 2011). It is the primary means to organise and report financial related information to the organisation’s management and to interested outsiders of the company (Shillinglaw and McGahran, 1993). Hence, accounting can be generally distinguished between management accounting, which is accounting used by a company for internal management decisions, and financial accounting, which is towards an externally interested audience commonly referred to as stakeholders. Financial accounting must generally follow the accounting standards stipulated by accountancy bodies.
In the following, financial accounting and its related disclosures to stakeholders are subject to further discussion. Management accounting, which is specific to each individual organisation and tailored to the needs of the organisation’s management, is not within the scope of this thesis, even though the concepts of model building described here could be applied in a similar manner.

As discussed in section 2.2.1, financial accounting and its related disclosures are used to provide financial information about an organisation, sometimes also referred to as a reporting entity, that is useful to present to potential equity investors, lenders and other creditors in making decisions in their capacity as capital providers. Even though other parties than capital providers are not the primary addressees, as capital providers have more direct and immediate needs, such information might also be useful for external users who are not capital providers (IASB, 2008, OB2 and OB8).

Accounting models establish the body of accounting principles such as basic assumptions, concepts, principles and procedures in determining the method of recording, classifying, measuring and presenting financially relevant information to be followed; the needs of the users of financial information are generally only implicit in these principles (Solomons, 1995). They are true by convention as described in previous sections.

Many different accounting models are available and these exhibit different degrees of relevance and reliability (4.65 of IASB (2010)). Financial statements are constructed under one or more accounting models (4.65 of IASB (2010)) and the conceptual framework underlying the financial reporting has been developed so that it is applicable to a range of different accounting models (Introduction of IASB (2010)).

Model building in accounting is not considered to be new (Mattessich, 1958), but it is different from the understanding of general model building theory as discussed in previous sections and is explained in the following. An example of a financial reporting model is the currently effective IFRS that embed, as described above, other more general accounting models covering elements such as double entry bookkeeping principles79 (Dunn and Grabski, 2001). Several other financial

79 also referred to as double entry bookkeeping model, originally promulgated over 500 years ago by Luca Pacioli (Dunn and Grabski, 2001).
reporting models are discussed in the literature, which are currently effective and applied or are under discussion to enhance currently effective financial reporting models (Tayyebi, 2008; CFA, 2007). Furthermore, components of a variety of known accounting models are under scrutiny (Mansour et al., 2008; Boyle, 2009). The financial reporting model building process, either a component of a comprehensive financial reporting model or as a whole, is determined by the different accountancy standard setters. Generally, they stipulate the conventions for financial reporting models and, therefore, they belong to the group of conventionalists described in section 4.2.1 who postulate a conventional stipulation, here financial accounting rules, as the core of representation of the financial situation of an organisation.

Financial accounting standards setters are generally established as a specialized public organization or as private agencies to whom the government delegates (Young, 2014; Mattli et al., 2005). The FASB in the US and the IASB are such private agencies. For example, the IASB, or more precisely its Foundation, is an independent, privately organized, non-profit organization, operating to serve the public interest. Compared to the FASB, the IASB has a different operating structure; in particular, there is no external government authority supervising the IASB’s activities and, at least in theory, the accounting standards could be issued without any significant public debate (Baker et al., 2015). The governance and due process are designed to keep the standard setting independent from special interests while ensuring accountability to their stakeholders around the word (IASB, 2017a). The governance structure includes an IFRS Foundation Monitoring Board composed of representatives of public authorities and the Trustees of the IFRS Foundation who are responsible for the governance and oversight of the IASB. The current members of the Monitoring Board are representatives of the Board and the Growth and Emerging Markets Committee of the International Organization of Securities Commissions (IOSCO), the European Commission (EC), the Financial Services Agency of Japan (JFSA), the US Securities and Exchange Commission (SEC), the Brazilian Securities Commission (CVM), the Financial Services Commission of Korea (FSC) and the Ministry of Finance of the People's Republic of China (China MOF). The Basel Committee on Banking Supervision participates in the Monitoring Board as an observer. It is worth noting that the Monitoring Board reviews its own
governance framework and is responsible for the implementation of any action plans from the review (IASB, 2017b; Danjou et al., 2012). The IFRS Interpretations Committee, the IFRS Advisory Council and the Accounting Standards Advisory Forum (a group of representatives from the international standard setting community) assist the IASB in in the standard setting process on technical matters (IASB, 2017b).

Some of the members of the Monitoring Board were instrumental in the design of the IFRS Foundation as it exists today. It gives the IASB its current legitimacy\(^{80}\) as a self-mandated standard setter, including its credibility on technical competence as well as on its self-commitment to a thorough and independent due standard setting process (Danjou et al., 2012; Richardson et al., 2011). While it can be argued that the IASB may have a certain legitimacy, the issue of legitimacy does not seem yet to be finally solved (Baker et al., 2015; Burland et al., 2010). However, the legitimacy comes at least partly from the fact that the oversight of the IASB is organized around market regulators. Government authorities from the different countries where IFRS is the mandatorily applicable financial accounting framework are not the predominant actors within the IASB governance structure, although they ultimately and legally allow the use of IFRS (Danjou et al., 2012). The apparent lack of primary power of those governments over IASB activities have led to criticism by them. For example, the European Parliament stated in 2008 - i.e. after having accepted the IFRS in general as the basis for financial reporting by companies - that the IASB “is a private self-regulated body which has been given the role of lawmaker for the EU … [the European Parliament] underlines that the IASC/F/IASB … lack transparency, legitimacy, accountability and are not under control of any democratically elected parliament or government, without the EU institutions having established the accompanying procedures and practices of consultation and democratic decision-making that are usual in its own legislative procedures” (European Parliament, 2008: p. 4). Independent of their perception, they play a key role in the endorsement and enforcement of IFRS in their respective jurisdictions (Alexander et al., 2011; Lewis

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\(^{80}\) Legitimacy could be defined as “a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions (Suchman, 1995: p. 574). For a more extensive discussion, refer also, for example, to Peter (2016), and to Danjou et al. (2012) and Richardson et al. (2010) as regards the legitimacy of the IASB.
et al., 2004). Their influence is clearly apparent, as illustrated by an explanatory memorandum of the European Commission Services on the proposal for a regulation adopting IAS 39 issued on 24 September 2004. This memorandum refers to the Lisbon Agenda in June 2000, where it was agreed unanimously to implement the financial reporting strategy, which included the requirement of preparation of consolidated financial accounts in accordance with IAS/IFRS, but subject to endorsement by the Commission (European Commission, 2004a; European Commission, 2004b). The latter means that the European Commission will adopt each single standard individually before it becomes effective in the European Union. At that time, and with that memorandum, the European Commission made it clear that it would not adopt the IAS 39 as promulgated by the IASB. The European Commission has endorsed IAS 39 partially then, carving out specific provisions in IAS 39. Following this partial endorsement and the respective political pressure on the IASB, the IASB revised the IAS 39 to accommodate to the European Commission’s position relating to the fair value option. This has led to the endorsement of the revised fair value option provision within IAS 39 by the European Commission (European Commission, 2005).

It should become clear from the above that the IASB is influenced by Realpolitik and that accounting standard setting is a political process as is generally confirmed in the literature, but it is not only political (e.g. Young, 2014; Gipper et al., 2013;)

81 Those carve-outs relate to the full fair value option and hedge accounting.
82 This carve-out of a subset of IAS/IFRS provisions certainly creates some issues for the application of IFRS. One of these issues refers to the requirement for IFRS applicants to state their full compliance with IAS/IFRS. IAS 1.16 states that an entity whose financial statements comply with IFRS shall make an explicit and unreserved statement of such compliance in the notes. An entity shall not describe financial statements as complying with IFRS unless they comply with all the requirements of IFRS. IAS 1 was also fully endorsed by the European Commission. Such carve-outs by the European Commission mean they comply either with European regulations, and hence not with IFRS, or vice versa.
83 Political influence can be understood as the purposeful intervention in the standard setting process by third parties/groups external to the IASB (including, but not limited to, governments) with the goal of shifting the standards setters’ position away from what they see as the ‘right answer’ (Gipper, 2013; Zeff, 2002).
84 The American Institute of Certified Public Accountants (AICPA) made an interesting statement when explicitly rejecting governmental entities to establish accounting standards: “Government agencies may be more susceptible to political pressure than private bodies. This could lead to accounting standards being designed to accomplish the self-servicing objectives of private interest groups rather than solely to meet the needs of those who use financial statements in making economic decisions” (AICPA, 1972: p. 22). Indeed, the exposure to multiple different stakeholders and
Wagenhofer, 2011; Bertomeu et al., 2011; Mattli et al., 2005). The influence may come from different directions and with different powers, such as politicians driven by the wider social society/population, market regulators and prudential regulators such as the European Central Bank, companies with a particular interest or particular users of financial statements (Wagenhofer, 2011; Bertomeu et al., 2011). The IASB may accept that to a certain degree, which may also help further increase its legitimacy. Alexander (2006) also makes this point: it is a question of the extent to which governments should be allowed to influence accounting regulations, as they have certain responsibilities in the accounting standard setting process as well, for example in the legal enforcement process of financial accounting standards, but they should not influence direction and content. Hence, the IASB should be clear on, and should make more visible, the degree of political influence it accepts. What is not clearly articulated in rules and procedures is at risk of becoming subject to political influence. This starts with setting the agenda as a crucial determinant of accounting standards, for which little evidence on the influencing economic and political factors is generally available, but which determines the projects that a financial accounting standards setter such as the IASB decides to put on their agenda (IASB, 2017c; Gipper et al., 2013; Howieson, 2009). Political influence may likely not be consistent and coherent with the IASB’s objective of developing decision-useful financial accounting standards. In any case, financial accounting standard setting is a conventional stipulation from a self-managed non-government organization in the case of the IASB that is subject to political influence as described above.

With regard to this research study, the IASB has deferred (paused) the intangible assets project it has had on its work agenda since December 2007 (IASB, 2017c). One reason may be the need to reallocate staff to other technical topics due to the emerging financial crises during this time and the related political pressure to prioritize technical issues, which are deemed more important than intangible assets from such political groups. The IASB has clearly and repeatedly expressed the relevance of further work on the topic of intangible assets and unanimously supports research projects in this direction (IASB, 2017c). The intangible assets project at the governments through its legitimacy allows the IASB not to accept everything driven by a specific subgroup rather than focusing on useful information, although political compromises may remain, as illustrated above.
IASB is still paused, although some standards setter work and research have continued (refer to section 5.2.3.2 for further details).

Indeed, in the course of developing a revised financial accounting standard for intangible assets, political influence can be expected. However, the primary question remains—and special attention should be given to—the nature and degree of such political influence compared to a sound financial accounting standard development for intangible assets that is consistent and coherent (i.e. logic) in achieving the objective of financial statements—i.e. decision-useful.

Apart from the political influence on the standard-setting process as described above, the general standard-setting process as illustrated for the case of and determined by the IASB is as follows (IASB, 2017e):

Stage 1: Setting the agenda

Stage 2: Project planning

Stage 3: Development and publication of a discussion paper

Stage 4: Development and publication of an exposure draft

Stage 5: Development and publication of an IFRS

Stage 6: Procedures after an IFRS is issued

As the chairman of the IASB, Sir David Tweedie, emphasised in his foreword of the IASB document “How we consult” in 2010, establishing globally applicable standards can be achieved only through consultation with interested parties around the world. However, he admitted that it is ‘notoriously’ difficult to draw the investor community into the standards-setting process (IASB, 2010); According to IASB (2010), the Board and the staff of the IASB initiate and develop new standards mainly from their own views and observations. After having developed the first discussion papers, they are published with the request for feedback by interested parties. However, there is no systematic involvement of the main parties concerned
such as capital providers or any mandatory inductive research and accounting standards-setting process. Capital providers are largely missing in the initiation process for possible new standards\(^{85}\) and the IASB hopes that the main parties, or at least a representative group of them, contribute to the development process in a proactive manner by expressing their views in writing to the IASB. However, as the IASB chairman indicated, the main parties do not generally actively contribute to the process in an IASB-expected manner, which corresponds to the feedback received from the interviews performed for this thesis. This is the reason why the accounting standards process can be seen as a conventionalists’ approach through the stipulation of new accounting rules.

A remark should be made here: the double bookkeeping ‘model’, as originally promulgated by Luca Pacioli over 500 years ago (Sangster, 2010; Thompson, 1991), is also a data model, or more generally an Extraction System, as described above. It may also be argued that this is, similar to financial reporting, a result from a conventional stipulation in respect of the transactions of a company. However, this ‘model’ became part of the social reality underlying all types of financial reporting models in a natural way. As discussed in chapter 2, some authors believe the current financial reporting model is no longer adequate, as it does not, for example, adequately capture the intangible value of a firm. However, constituencies want to keep this general financial reporting model, even though they desire enhancements, in particular relating to intangibles (refer to following chapters).

As science is about phenomena, not about data (see section 3.6.2; also Frigg, 2010; Bogen and Woodward, 1988), the question is whether to take the double entry bookkeeping ‘model’ as part of the real social world and develop a new financial reporting model for intangibles based on this presumption. Alternatively, a new model could be developed starting from the more general phenomenon of adequately capturing intangibles for financial reporting. The questions in this empirical research were tailored in a way to consider this issue as well. The outcome was that the

\(^{85}\) They may only be considered somehow through the optional research papers, but the majority of these research papers, if not all, refer to PAT, as described in chapter 3, which only provides limited insights into capital providers’ needs.
double bookkeeping ‘model’ should remain an underlying model for the financial reporting process.

Generally, the following aspects should be considered in the course of developing new accounting, and particularly financial reporting, models:

- General model building and representation requirements
- Specific characteristics of financial accounting models
- Objective(s) that should be achieved by these models (e.g. current financial reporting models seek to fulfil the information needs capital providers might have to make their decisions, i.e. those capital providers should be systematically involved)

The following section describes the model building process and results of a new IDF model for external financial reporting. This is based on the inductive research activities described and discussed in chapter 3 and considers the general model building aspects as described in previous sections. The required elements for the IDF model have already been extracted in chapter 3 (refer to section 3.5).

4.3 Development of a new IDF model

4.3.1 Introduction

The previous section introduced general model building theory, particularly the current model building approach for financial accounting frameworks and principles. It is evident that a modern approach towards financial accounting model building is needed. The principles of model stipulation, as also advocated by conventionalists (refer to section 4.2.1), do not correspond to the current view of acceptable procedures in general model building theory. They also fail to capture the particular needs of financial statement users. The latter is indicated by the literature, but also confirmed by the results from the first part of this empirical research (section 3.3). In this respect, the contribution of this research to current knowledge in accounting is not limited to a contribution to CondNAT through an empirical research approach. It
also contributes to the more particular field of financial accounting modelling, as described in section 4.1.

As described in previous sections, a theory can be regarded as a family of models. Based on this view, the development of this new IDF as a financial accounting model does not only provide a new financial accounting model, but it also contributes to CondNAT. As CondNAT is a young theory, as described in a previous chapter, this developed IDF constitutes a major element and evidence of it. Moreover, for the first time, empirical evidence is provided to support CondNAT theory.

The following figure summarises the relation between model building, in general and in financial accounting, empirical research in accounting and the development of the new IDF model.

![Diagram of the relation between model building theory and the development of the IDF model](image)

*Figure 4.3: Relation between model building theory and the development of the IDF model*

The next section describes in more detail how model building theory is considered in developing a new IDF model. Section 4.3.2 also describes how the new IDF model is developed and particularly composed of the various different components identified in the empirical research and summarised in section 3.5. The new IDF is finally described in section 4.3.3.
4.3.2 Mapping the empirical intangible factors and approaches to a comprehensive IDF model

After having recognised that a new IDF model is needed, relevant components have been systematically extracted from the interviews as well as identified by the questionnaires about the different knowledge valuation and reporting models and the respective elements thereof, as discussed in chapter 3. These components are summarised in section 3.5.

Referring to the model building process described in previous sections, these components are identified from the Extraction System. The Extraction System is the groups of stakeholders interviewed. Interviewees represent general financial statements users as described in section 2.2.1. This representation refers to an E-Representation as described above. It is a faithful representation of the Target System, as it follows current research practice in social sciences research, particularly relating to business and accounting as described in sections 3.2 and 3.4. The Extraction System is also described in sections 3.2 and 3.4.

The new IDF model has to represent the Target System, which is faithfully represented by the Extraction System as explained above. The Model System of the new disclosure model already represents the components of the real world that financial statements users find useful and value relevant for their decisions. However, the structure of the new disclosure model, namely the rules for the combination of the various identified components to arrive at a composite (i.e. the new IDF model), should also represent what financial statement users need to make useful decisions. A reasonable key has to be established to ensure the latter outcome.

No keys have thus far been defined for this specific representation. As Frigg (2010) indicates, few keys are suggested in the literature and these mainly relate to physical or natural science. Compared with physical and natural science, the Model System

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86 The term “reasonable” is used as the key allows us to translate facts from the real world into claims in the Model System and vice versa. A reasonable key is similar to what Godfrey-Smith (2006) and Giere (1998) state: that the Model System should resemble the Target System. They do not state that it must be similar to the “key” with specific conditions to be met, as referred to by Frigg (2010).
developed here does not describe some types of physical objects in the real world. It rather describes non-tangible phenomena as are rather common in social sciences compared with physical sciences. Hence, the issue to find a reasonable key has to be further discussed.

As discussed in section 4.2.1, the Model System does not represent its Target System through an isomorphic relationship, which means these systems are not connected by a mathematical structure. Hence, the key cannot be presented by a mathematical structure. A stipulation of a key, assuming it is the right key, does not seem to be generally accepted business and accounting research even though conventionalists and advocates of normative accounting research may have different views, as discussed in sections 3.2 and 4.2.1. Therefore, the key should allow the Model System to be similar to the Target System in certain respects, degrees and properties (refer to section 4.2.1). There are two keys described in section 4.2.1 in this context: “identify” and “ideal limit”. Neither seems to be reasonable for model building in accounting:

- the key “ideal limit” requires that two conditions are met: experimental refinement and convergence. Without going into further details of the difficulties achieving experimental refinement, convergence is impossible to measure in a strict mathematical sense in social sciences, particularly in accounting, as it would assume that the relevant elements under consideration in the Model System and Target System can be (already) measured on an interval or ratio scale (refer to section 2.3.2; Krantz et al., 1971, p. 11).
- the key “identity” requires a rule that ensures that facts in the Target System are also facts in the Model System, which can hardly be achieved in social sciences, particularly in accounting. This key may only be applicable where a physical object in a complex Target System is t-represented and where the attributes under scrutiny are identical in both systems.

As a consequence, the definition of the key as needed here and more generally in accounting research, has to refer back to the principles of a key, which means a key has the character of a proposition.
Based on this approach, the IDF model, or more precisely the composition of the various components identified in the empirical research part described in chapter 3, is stipulated by the author in a way that the new model is expected to bear the overall property of decision-usefulness for financial statements users. More generally, it is expected that the new model represents the Target System based on this stipulated key. The reasonableness of the stipulation is validated in chapter 5 using typical methods of scientific investigation in social sciences, particularly in accounting (Frigg, 2010; Giere, 1988).

Through the stipulation of the structure for the new IDF model, the researcher becomes an active part of the research process. The background of the researcher\textsuperscript{87}, i.e. his knowledge and experience in the domain of financial accounting, is deemed to be useful to develop a reasonable stipulation, which becomes, as a proposition, subject to further empirical validation. The empirical validation ensures that the Model System actually represents what the Target System is, namely that the new model responds to the needs of financial statement users. The involvement of the researcher/author in the model building process can be graphically shown as follows:

![Figure 4.4: Involvement of researcher/ author in the model building process](image)

As described above, interviewees provided the components of the new IDF model. The researcher then put these different components together based on his best

\textsuperscript{87} A more detailed description of the researcher’s background can be found in Appendix II.
knowledge and experience, but also based on several indications given by interviewees (indicated in Figure 4.4 by the dotted arrow from “Constituencies/Interviewees” to “Structure of new IDF Model”) to compose the new model. For example, interviewees stated that they wish to see more cash flow projections relating to intangibles in the future. This is translated into a table with cash flow projections over future years, which should be added to the explanatory part of the new model. Another example is that the interviewees wish to see future cash flows and revenue streams from intangible sources, quantified measures and a respective link of those cash flow streams from intangible sources to the company’s budget as well as to the company’s overall business strategy in a new model (section 3.3.9). Together with the preference for a DIC method (model 21) and the FiMIAM (model 22) (refer to section 3.4.2), these claims are translated into the key valuation and presentation steps, which consist of the valuation of each individual asset on a stand-alone basis (step 1-5) and the allocation of the differential amount of the sum of the asset values from step 1-5 and the fair value of the company as a whole to reflect the interactions among the different assets and consider the particular contextual value of these assets. It is evident from these examples that there is no 1:1 (isomorphic) relationship between the identified components from the interviewees and the respective parts of the IDF model, but the nature and substance of the wishes and preferences are reasonably translated. However, whether this particular translation and the specific way of composition of the various identified model components is effectively performed in a reasonable manner in the new IDF model is subject to further validation in the following chapter, as the researcher’s proposal based on the interviews is only an initial proposition at this stage as discussed above.

Strictly speaking, empirical research is not fully objective in nature, as discussed in chapter 3 (this element of subjectivity is indicated in Figure 4.4 by the dotted arrow from “Researcher” to “Components of new IDF Model” for the sake of completeness). This does not mean that efforts were lacking to make this research as objective as possible. However, the research process required a certain degree of judgment at certain stages, as discussed in chapter 3 (e.g. relating to the choice of research strategy, selection of interview candidates, how findings are filtered from interviews using principles from grounded theory, etc.). Another judgment relating to the various elements proposed by interviewees also had to be made: for example,
how many times must a component be stated by interviewees before it is considered to be useful for the new IDF model? As explained in sections 3.3.9 and 3.5, components have to be stated at least twice in phase I/step I of the empirical part (refer to section 3.3.9) and at least three times for the components identified in the course of research refinement, i.e. phase I/step II (refer to section 3.5). Other components indicated in phase I/step II that are stated fewer than three times are also considered if consistent to the other components. Therefore, a certain degree of own judgment from the author is also involved in this step of the model building process. However, this degree of judgment becomes integral to validating the new IDF model, as described in chapter 5.

In general, the research methodology chosen in this study has the following implications on the way the new IDF model was developed: Qualitative research strategy and related interviews provide rich insights into the researchable topic, but the data collected is less structured and hence, structuring, data reducing, coding and development of themes are mainly the work of the researcher (refer to section 3.2.4). Therefore, judgement and interpretation is needed from the researcher to relate the different issues, themes and sub-themes together. This degree of judgement and necessary interpretation becomes integral to validating the IDF model. Consequently, the new IDF model, which is based on the interviewees’ contributions, is regarded as a kind of preliminary model that has to be validated again. This approach is also in line with the discussion above that a key is often preliminary at inception and needs refinement over time (refer also to section 4.2). But even after the validation of the IDF model, there may still be some uncertainty as to whether the researcher has translated all the thoughts and comments from the interviewees in an appropriate manner into the new IDF model. Moreover, a key for models in social sciences cannot be established as a unique (isomorphic) mathematical structure (refer to section 4.2.2). However, the validation allows the researcher to reduce the difference between a hypothetical “perfect model” and the IDF model to an acceptable degree (refer also to section 4.2.2) even though this difference between this and the perfect model cannot be measured precisely\(^88\). This also means that this difference may

\(^{88}\) Otherwise the key “ideal limit” should be considered although it is not an appropriate key in social science (refer to discussion in section 3.6)
result in the fact that some aspects in the IDF model are not perfectly translated from the interviewees, but are nevertheless acceptable for them.

Finally, after the Model System and its representation, the Model Structure still has to be considered. The Model Structure consists here of the underlying simple algebraic calculations as well as the double bookkeeping principles that underlie the new IDF model. As it has been shown in the empirical research part discussed in chapter 3, constituencies do not want to abandon current financial statements, but they want useful information based on them. Therefore, the mathematical structure is not subject to further investigation. Moreover, the mathematical structure as referred to here is deemed as an integral part of the new model. Whenever it is referred to the new IDF model, it relates to the Model Structure and Model System as explained here.

Overall, it can be concluded that the new IDF is a model, as described above. As a new IDF model, it contributes to CondNAT, as discussed in section 3.2. The stipulation of the representational function of the Model System, particularly with regard to the composition of the various components identified in chapter 3, is validated in the next chapter.

However, the IDF is not only a model; it is an accounting model derived directly from the needs and views of financial statements users. As suggested in section 4.2.3, it also considers the different aspects accounting models, particularly financial reporting models, should have.

The IDF model for published financial statements should be useful and relevant (i.e. acceptable) for users and improve currently published financial statements. It should overcome current knowledge reporting weaknesses as identified in the literature (e.g. Bose et al., 2007; Lev, 1996; Ittner et al., 1996; Cheney et al., 1991) such as considering underlying value drivers (Bose et al., 2007, p. 1494), which constituencies would need to make better decisions upon financial statements.

The new IDF model is also consistent with the view of the Financial Accounting Standards Board on an improved financial reporting system relating to intangibles, i.e. such a model should consider the recognition and measurement of internally
generated intangible assets, expanded and systematic use of non-financial performance metrics and expanded use of forward-looking information (FASB, 2001). Moreover, it also requires reconciliation with non-financial measures using strategic management to projected financial figures.

The main objective of this new IDF model is to provide financial statement users with information and explanations, as identified and retrieved from the interviews, about:

- the most valuable and important intangible resources of a company;
- where intangible values come from within a company;
- linking the consistency of the strategies, forecasted budgets and actual financial results to the use and exploitation of the intangible resources of the company.

The IDF is set up in several different steps. These can be separated into two broad areas:

1) valuation and presentation of the results on the face of the balance sheet (steps 1–8)
2) additional explanatory information to be disclosed in the notes (steps 10–18)

The model requires:

1) the fair valuation of all identifiable tangibles and intangibles (including intangibles that are not identifiable according to accounting standards such as IAS 38, but which are reasonably identifiable by the company such as similar to business consolidation requirements according to IFRS 3 or even beyond subject to management’s judgment);

2) the fair valuation of the whole company and calculating the difference between the company’s fair value and 1). This would likely result in a difference that should be smaller compared with current goodwill accounting, e.g. under IFRS 3;

3) extensive disclosures about the method of fair valuation, details of a company’s fair value and its main value drivers as well as the allocation method of the excess
between a company’s fair value and the current carrying amounts of all identifiable assets and liabilities as well as reconciliation with a company’s business objectives and strategies.

The model is beyond the (more restrictive) scope of IAS 38 and IFRS 3 in terms of intangible assets recognition and valuation, as it is more comprehensive and allows more intangibles to be recognised and fairly valued in a different manner. It is also beyond the scope of notes disclosures (e.g. value drivers, future cash flows linked to strategies and objectives, reliability verification based on the comparison of historical estimates and actual performance, etc.).

The following table provides a synoptic overview of the discussion in section 2.2.1.3 related to the key criteria and limitations as regards intangible assets recognition and measurement in IAS 38 and IFRS 3 (including associated standards such as IAS 36):

<table>
<thead>
<tr>
<th>Criteria</th>
<th>IAS 38</th>
<th>IFRS 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definition of intangible asset (IAS 38.8)</td>
<td>An identifiable non-monetary asset without physical substance</td>
<td>Same (IFRS 3, Appendix A)</td>
</tr>
<tr>
<td>Identification (IAS 38.12)</td>
<td>(a) An asset is separable—i.e. an asset—if capable of being separated or divided from the entity and sold, transferred, etc. regardless of whether the entity intends to do so. (b) An asset arises from contractual or</td>
<td>Same (IFRS 3, Appendix A)</td>
</tr>
<tr>
<td>Definition of (externally acquired) goodwill</td>
<td>N/A</td>
<td>An asset representing the future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately</td>
</tr>
</tbody>
</table>
| Recognition (IAS 38.21; IAS 38.18) | If the definition of an intangible asset and the following recognition criteria are met (IAS 38.18):  
(a) It is probable that the expected future economic benefits that are attributable to the asset will flow to the entity.  
(b) The cost of the asset can be measured reliably. | Same (IFRS 3, Appendix A; Recognition criteria are assumed to be met under IFRS 3 (IAS 38.33; IAS 38.35–38.41). |
| **Recognition and initial measurement of goodwill** | No recognition of goodwill. Expenditure may be incurred to generate future economic benefits (they are often described as contributing to internally generated goodwill), but it does not result in the creation of an intangible asset that meets the recognition criteria in IAS 38. Internally generated goodwill is not recognized as an asset because it is not an identifiable resource controlled by the entity that can be measured reliably at cost (IAS 38.49). | Difference between the fair value amount of the considerations transferred and the total net of the acquisition. Date amounts of the identifiable assets acquired and the liabilities assumed (IFRS 3.32; IFRS 3.20; IFRS 3.24–3.31). |
| **Initial and subsequent measurement** | Initial measurement at cost (IAS 38.24) and subsequent measurement either: (a) At cost less any accumulated amortization and any accumulated | Initial measurement at fair value (IFRS 3.18) and subsequent measurement according to IAS 38 (IFRS 3.54). |
One key difference related to intangible assets between these two standards is that IFRS 3 requires the accounting event of a business combination and IAS 38 does not—i.e. with a business combination, both standards are applicable for intangible assets (principally IFRS 3 with reference to IAS 38), whereas without a business combination, only IAS 38 is relevant. This leads to the following key issues, as discussed in section 2.2.1.3, relevant to this discussion:

1) Identification
2) Externally vs. internally generated goodwill
3) Recognition criteria assumed always to be met
   a. In a business combination
   b. If an intangible asset is (externally) acquired

The issue of identification is discussed in detail in section 2.2.1.3. In summary, a key flaw in this definition is that the IASB believes assets must be somehow separable and the economic benefit needs to flow to the owner from this asset alone, independent of other assets to which it may relate. IFRS wants to recognize assets only if they are physically separable, ignoring the fact that many (physical and non-physical) assets in today’s business are highly specialized assets that create the value without the appropriate context. This ontological objectivism embedded in IAS 38 is overcome in the IDF model by a more constructivist approach based on users’

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89 Impairment loss is measured in accordance with IAS 36.6 and IAS 36.18 as follows:
Impairment loss = max{0; carrying amount – recoverable amount}
with recoverable amount = max{fair value – cost of disposal; value-in-use}

90 (Amortized) cost is a strict upper limit for the measurement in this respect. Even though the value-in-use may be significantly higher than the amortized cost, the carrying amount will not be appreciated over the amortized cost amount.
articulated views. However, if an asset is not physically separable but arises from contractual or other legal rights, regardless of whether those rights are separable, it is identified as an intangible asset. Although this condition looks very specific and limiting, IAS 38 does not specify it. Without any further specification, it may to be rather easy (for lawyers) to think about some sort of legal right arising from an intangible item. What is not clear from the IAS 38 is why an intangible item arising from a legal right - but which is not legally and physically separable (or which can be divided from the entity) - is treated more favourably than other non-separable items. It is in substance a non-transferable economic item that seems hard to distinguish from the entity as a whole, and hence any measurement will be associated with the values of related items. It does not appear to be coherent with other IASB reasoning. If the IASB allows such items to be recognized that are deeply embedded in an organization and which are not separable from the entity as a whole, it implies that the IASB may rather tend to an ontological constructivism approach, at least in respect of this part of the IAS 38, and accepts a larger degree of judgement in the measurement which tends to go rather in the direction of value-in-use. The degree of judgement is by no means more or less complex than for any other intangible item an entity may have without a particular legal right, but which is currently not allowed to be recognized. Perhaps the IASB may want to see control over the economic benefit flowing to an entity through the legal right, but this is already covered by the definition of an asset in general - i.e. it is not particular to the non-physical nature of the asset in question. Indeed, the latter is an economic concept while the former consists of a legal reference, but the distinction between these two is not clear at all: neither is the economic reason clear for the distinction between non-separable assets to which legal rights are attached and those that do not have such legal rights. A reason for this incoherence may be the IASB’s ontological swing between objectivism and constructivism, which leads to the lack of a clear and consistent guideline for a coherent standard. The IDF model does not constrain the identification of intangible assets in the same manner that IAS 38 does. It follows a constructivist approach with an economic and user-based view and abandons the need for two different (and inconsistent) standards depending on whether or not an intangible asset is assessed in the context of a business combination.
If the accounting event of a business combination occurs, a goodwill (refer to section 2.2.1.3) may need to be recognized as an asset, which represents the future economic benefit arising from other assets acquired in a business combination that are not individually identified and separately recognized in accordance with IFRS 3. In other words, the difference between the fair value of a purchased entity and the carrying amount of its identifiable net assets at the time the business combination occurs is recognized as goodwill. Following the IASB, such assets do not exist in such a way at any time other than exactly when a business combination occurs. IAS 38.50 states that differences between the fair value of an entity and the carrying amount of its identifiable net assets at any time may capture a range of factors that affect the fair value of the entity, but such differences do not represent the cost of intangible assets controlled by the entity. This seems to be incoherent, as the event of a business combination creates only an accounting artefact for something that already exists, but it does not create a new reality in respect to the fair value\textsuperscript{91}. However, the IASB seems to believe that one single transaction establishes a reliable fair value under IFRS 3, whereas under IAS 38 they would require an active market\textsuperscript{92} to use fair value as a measurement concept, which is certainly not given with one single transaction. Instead, the IASB applies a prudent approach under IAS 38, and it is not clear in IAS 38 how it relates to decision-useful information: IAS 38 generally requires the use of a cost-based approach which is different from, among others, the fair value, leading generally to lower carrying amounts.

This issue becomes even more evident when looking at the recognition criteria which must be met under IAS 38, for IFRS 3 to be assumed to be met:

- IAS 38.21(a): It is probable that the expected future benefits that are attributable to the asset will flow to the entity.
- IAS 38.21(b): The costs of the asset can be measured reliably.

\textsuperscript{91} A business combination changes the reality of the businesses concerned. While the fair value may not necessarily change just at the second when the business combination officially occurs, the value-in-use may certainly change as the assets (and liabilities) are operated in a new context.

\textsuperscript{92} Refer to IFRS 13.
This means a transaction price for a purchased entity as a whole implies—and provides evidence—that the recognition criteria for all identified individual intangible assets are met. This conclusion seems to be at least questionable.

IAS 38.33 justifies this conclusion with reference to IFRS 3: if an intangible asset is acquired in a business combination, the cost of that intangible asset is its fair value at the acquisition date. The fair value of an intangible asset will reflect market participants' expectations at the acquisition date of the probability that the expected future economic benefits embodied in the asset will flow to the entity, even if there is uncertainty about the timing or the amount of the inflow. Therefore, the probability recognition criterion in IAS 38.21(a) is always considered to be satisfied for intangible assets acquired in a business combination. If an asset acquired in a business combination is separable or arises from contractual or other legal rights, sufficient information exists to measure reliably the fair value of the asset and, therefore, the reliable measurement criterion in IAS 38.21(b) is also always considered to be satisfied for intangible assets acquired in business combinations.

When the standard was approved by the IASB,93 there was a dissenting voice from Professor Whittington, because the standard does not explicitly require the probability recognition criterion in IAS 38.21(a) to be applied to intangible assets acquired in a business combination, notwithstanding that it applies to all other intangible assets (IAS 38.DO1). The IASB argues that fair value is the required measurement on acquisition of an intangible asset as part of a business combination and fair value incorporates probability assessments. Professor Whittington does not believe that the IASB’s conceptual framework precludes having a prior recognition test based on probability, even when subsequent recognition is at fair value. Moreover, the application of probability may be different for recognition purposes. For example, the 'more likely than not' criterion in IAS 37 may be used rather than the 'expected value' approach used in the measurement of fair value. This inconsistency was acknowledged by the IASB but not solved (IAS 38.DO2).

The recognition criteria are also assumed to be met implicitly whenever an enterprise acquires an intangible asset (IAS 38.BCZ42). If all other conditions are met,

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93 At that time, it was the IASC that approved it, the predecessor to the IASB.
intangible assets are recognized independent of whether those intangible assets have been recognized as assets of the seller/acquiree (IAS 38.34). To avoid any misinterpretation, IAS 38.64 specifically prohibits the recognition of brands, mastheads, publishing titles, customer lists and items similar in substance as intangible assets that are internally generated. The IASB believes that internally generated intangible items of this kind will rarely, and perhaps never, meet the recognition criteria in IAS 38 and, to avoid any misunderstanding, it decided to set out this conclusion in the form of an explicit prohibition (IAS 38.BCZ45).

It is evident that the IASB believes that transactions which create accounting artefacts are the key source to determine a reliable measurement in IAS 38 and IFRS 3 and all other means fall under the rebuttable presumption that they do not lead to reliable measurement. The IASB states in this respect that it is difficult to determine the fair value of an intangible asset reliably if no active market exists for the asset. But active markets with the characteristics set out in IAS 38 and IFRS 13 are highly unlikely to exist for (internally and externally generated) intangible assets. One transaction generally does not establish an active market. However, the IASB says on the one hand that one transaction establishes a reliable fair value for initial recognition (IFRS 3), but on the other hand one transaction does not establish an active market and hence a basis for the fair value measurement of intangible assets (IAS 38). This is not consistent. Furthermore, as fair value measurement is not possible in most cases under IAS 38, the IASB requires the application of the (acquisition) cost-based approach. This follows a general IASB rule, as justified by the IASB, in case no reliable fair value is available, because IASB did not believe that it was necessary to make an exception to the principles generally applied for the initial recognition and measurement of non-financial assets (IAS 38.BCZ44 (b)). The cost approach refers to existing artefacts (actual transactions from the past) in an accounting system that are accumulated with their monetary values for a common purpose (cost measurement), but it ignores values created by a company through the combination of different input factors (but the latter is considered in the fair value at

94 This does not seem effectively to be a general guiding rule; see, for example, IFRS 9, where financial instruments must be fair valued even though there is no active market and the fair value is determined based on a financial model and the involvement of significant expert judgement (refer to IFRS 9 and IFRS 13 for more detail).
a time when a business combination occurs). For subsequent measurement, the cost approach means it establishes a clear upper limit, but it may also allow the recognition of ‘values’ - for example, monetary values - for intangible items not meeting the definition of an intangible asset according to IAS 38, which are internally generated by a company through the combination of different assets and intangible items (if the value-in-use concept is applied for impairment measurement) instead of just assessing a single item on a standalone basis without its economic context. Overall, it seems to be more suitable for the IASB to accept, and hence conventionally stipulate, a price for a single transaction as fair value to use as a cost basis for initial recognition compared to a more thoughtful technical, conceptual debate related to fundamental flaws in its intangible accounting approach. More generally, it remains an open question why the IASB has developed, and therefore accepts, such inconsistencies and incoherence in and among its standards. It may have needed to consider requirements from important stakeholders such as regulators which did not allow the IASB to strictly adhere to and follow a common principle/conceptual objective guiding it to consistent standard developments. It seems that Realpolitik had a real practical application case in this respect.

The latter also brings the key issues back to the conceptual framework. The IASB believes that decision-usefulness is achieved by reliable information. Therefore, the IASB stresses and considers it in the development of its standards. In all relevant standards, it eventually faces the issue of what reliability means in the concrete case, which the IASB solves by simple saying “the board believes…” This provides a justification for conventional stipulation and may also be regarded as the entry door for Realpolitik. By changing to, or at least emphasizing, verifiability as a fundamental qualitative characteristic in the IASB’s conceptual framework, the perceived intellectual pull-ups and contortions around the identification criterion and the two recognition criteria in IAS 38.21(a) probability of expected future economic benefits of the asset, and IAS 38.21(b) cost of the asset can be measured reliably, could be avoided. The results from the first part of the empirical research (Chapter 3) show that financial statements users see verifiability as a fundamental qualitative characteristic for financial statements. What they imply (and what they have also

95 There may be cases in which an impairment loss would have been identified without considering the value-in-use approach, but with the latter no impairment loss has to be recognized.
confirmed) is that measurement is always subject to uncertainties and, instead of
pretending accuracy, they prefer to be able to verify how and from what sources the
measures have been derived. In this way, reliability is effectively finally determined
for each case by the users and not stipulated, often arbitrarily in appearance, by
standard setters. The IDF also takes this requirement, as provided by the users, into
account. It removes the other inconsistencies and incoherence. A detailed description
of the new disclosure model is provided in the following section. In summary, the
following steps should be considered:

Valuation and Presentation

1. Step - Identification of different intangibles;

2. Step - Valuation of each single identified intangible at fair value (scope beyond
IAS 38; similar or beyond the scope of IFRS 3);

3. Step - Recognition of revaluation results for intangibles, as calculated in step 2;

4. Step - Revaluation at the fair value of other tangible assets and liabilities already
recognised on the current balance sheet;

5. Step - Recognition of revaluation results for the tangible assets and liabilities
calculated in step 4, which are already recognised on the current balance sheet;

6. Step - Fair valuation of the company as a whole;

7. Step - Allocation of the difference between the fair value of the company as a
whole and the carrying amount of the total equity as shown on the ‘preliminary
modified balance sheet (2)’ to the identified intangibles as well as to all other
tangible assets and liabilities (systematically and using management’s judgment).
This step considers further hidden intangibles as well as the asset value of the
different assets that only exist in this specific organisational structure and asset
portfolio combination\textsuperscript{96}. Systematic allocation should be based on a model

\textsuperscript{96} This approach can also be explained as follows: First, the assets are valued individually and
independently of their context (step 2). Afterwards the assets are revalued considering their use in the
specific context within a company (step 7). Therefore, the first and second value may differ from each
other and they may also differ from an estimated value of an independent third party. The latter values
proposed in the literature such as one of the SC models or the FiMIAM. This is significantly different to current accounting practice and beyond IFRS 3. This procedure is more similar to the concept of value-in-use as referred to in IAS 36 and in particular IAS 36.33\textsuperscript{97}. If a small residual remains, this represents a company’s structure-related intangibles relating to the company as a whole, or a kind a modified goodwill, which will be significantly less than the goodwill according to IFRS 3 and which should be regarded as a non-explainable value element of the company.

8. Step - Recognition and presentation of the different identified intangible elements as calculated in steps 2–7 on a regular basis. Consequently, valuation and presentation is significantly different to IFRS 3. It allows for the recognition of more identifiable assets, the fair valuations are different as interactions between different assets are considered, the result from revaluations are buffered within the equity but outside the profit & loss account and the model should be applied on every reporting date.

Disclosures

9. Step - Reconciliation of the valuation report with the company’s book value including all additionally identified intangibles as well as all revalued assets. This should be made as an equity reconciliation.

10. Step - Movement schedule for equity from the prior period to the current period, particularly for revaluation reserves;

11. Step - Extensive discussion for each significant identified standalone and linked intangible in the notes (related disclosure to the intangible elements of step 7);

\textsuperscript{97} IAS 36.33 states that in measuring value in use an entity shall […] base cash flow projections on reasonable and supportable assumptions that represent management’s best estimate of the range of economic conditions that will exist over the remaining useful life of the asset.
12. Step - Brief discussion on each significantly revalued standalone tangible asset and liability as well as on the respective revaluation proportions of each tangible asset and liability linked to the company’s overall value in the notes;

13. Step - Notes presentation of valuation report including the fair values of each identified intangible and liability (step 9 required reconciliation only. In this step, the details of the report should be disclosed).

14. Step - Extensive discussion about the procedure/model used to allocate the difference between the company’s fair value and its book value adjusted by (re-)valuations for identifiable intangible and tangible assets as well as liabilities. This disclosure note refers to step 7 and this is a core element in the new model.

15. Step - Comparison of the projected figures used in the valuation report in the past with the respective actual figures for the same periods. This step should provide investors with feedback about the reliability of management statements.

16. Step – Presentation of each intangible value on the face of the balance sheet should be compared with the value in the past 3–5 years.

17. Step - Discussion by a company’s management about how the fair value of the company as a whole and each single standalone and linked intangible relates to the company’s objectives and strategies. This step should link forward looking future cash streams based on the valuation report, which needs to be reconciled with the fair values of intangibles, to a company’s objectives and strategies based on management’s analysis, as management has the best insight into the company. As a consequence, management has to reconcile the value drivers that contribute to future cash streams with the non-quantified business objectives and strategies.

4.3.3 Description of the IDF model

1 Valuation and Presentation
1. Step (Identification of different intangibles):

Identify, as far as possible, all the intangibles (including, inter alia, specific intangibles of the company and the knowledge of employees as well as human and company potential) of and within a company. There are two types of intangibles: those already recognised as intangibles (e.g. in accordance with IAS 38) and those not yet recognised and need to be identified (e.g. intangibles beyond IAS 38). Examples of intangibles (= recognised and not yet recognised) are:

- Contract Intangibles (represent value to that broad category of rights as a result of a written, legally enforceable contractual arrangement; examples are franchise rights, service agreements, licensing rights, employment contracts, non-compete agreements, etc.);
- Copyright Intangibles;
- Customer Intangibles (e.g. customer lists, customer relationships, etc.);
- Data Processing Intangibles (e.g. computer software, electronic databases, multimedia works, webpages, etc.);
- Human Capital Intangibles (e.g. company’s assembled workforce and contracts with employees such as employment contracts, personality and other entertainment industry contracts, sports player contracts, covenants not to compete and non-compete agreements for individual employees, etc.);
- Location Intangibles (e.g. the value of being at a specific place, right to use a specific building/location, etc.);
- Marketing Intangibles (e.g. trademarks, brands, company logos, marketing strategy and promotion concepts, design of labels or packages, trade dress, trademark registrations, shelf space, etc.);
- Technology Intangibles (e.g. patents, patentable inventions, mask works, trade secrets, know-how, confidential information, etc.);
- Goodwill Intangibles (e.g. going concern, excess economic income, future events, professional practice goodwill, etc.).

2. Step (Valuation of each single identified intangible at fair value):
Value each intangible component identified in step 1 separately (including all intangibles already recognised in the financial statements) at fair value on a standalone basis based on the company’s best understanding and view.

→ Appropriate and modern valuation models should be used and applied consistently over the periods (e.g. DCF models or for more uncertain positions such as specific intangible and research activities, real options could be applied).

3. Step (Recognition of revaluation results for the intangibles calculated in step 2):

Compare the values determined for any single identified intangible with its respective current carrying amount on the balance sheet. The respective differences should be recognised on a ‘preliminary modified balance sheet (1)’.

The differences are either:

- added to the current intangibles already recognised, using a separate line item referred to as ‘addition from the revaluation of … [name of the respective identified intangible: e.g. licenses, patents, etc.]’ to the respective recognised intangible – as far as applicable – or

- result in a new intangible being recognised and shown by a new line item for each single identified intangible referred to as ‘addition from the valuation of … [name of identified intangible: e.g. customer list, trademarks, etc.]’ with its value as determined under step 2 ‘only’.

The counter entry is recognised as a special line item within equity, which is referred to as the ‘(re-)valuation proportion of intangibles separately identifiable’. In accounting terms, each difference in the identified intangible is debited as a separate line item of the respective intangible presented as ‘addition from the (re-) valuation of … [name of the respective identified intangible]’ – as identified under step 1 – and credited in equity as a special line item referred to as the ‘(re-)valuation proportion of intangibles separately identifiable’.
4. Step (Revaluation of other tangible assets and liabilities already recognised on the balance sheet):

Value each tangible asset and liability at fair value on a standalone basis based on the company’s best understanding and view.

- Appropriate and modern valuation models should be used and applied consistently over the periods (e.g. DCF models or for more uncertain positions real options could be applied).
- To simplify this task, the valuation report of the company as a whole from step 6 (see below) could be used for example.

5. Step (Recognition of the revaluation results for the tangible assets and liabilities calculated in step 4 already recognised in the current balance sheet):

Compare the values determined for any single tangible asset and liability with its carrying amount on the balance sheet. The respective differences should be recognised on a ‘preliminary modified balance sheet (2)’, which is the preliminary modified balance sheet (1) plus the respective differences for those tangible assets and liabilities.

The differences are added to current tangible assets using a separate line item referred to as ‘addition [or reduction, if applicable] from the revaluation of … (name of respective tangible asset/liability)’ to the respective tangible asset/liability.

The counter entry is recognised as a special line item in equity, which is referred to as the ‘revaluation proportion of tangible assets and liabilities separately identifiable’.

In accounting terms, each difference in tangible assets/liabilities is debited (credited, if applicable) as a separate line item of the respective tangible asset/liability presented as ‘addition [or deduction, if applicable] from the (re-)valuation of … [name of the respective tangible asset/liability]’ and credited
(debited, if applicable) in equity as a special line item referred to as the ‘revaluation proportion of tangible assets/liabilities separately identifiable’.

6. Step (Valuation of the company as a whole):

Value the company as a whole based on an appropriate and modern valuation model that uses future cash flow streams as a component (e.g. DCF or option price theory); apply this consistently over the periods. By doing so, any hidden reserves and burdens embedded in current (tangible and intangible) assets are recognised. The company’s forecasted budget should be consistent with this valuation (as most current valuation techniques are future-oriented).

7. Step (Allocation of the difference between the fair value of the company as a whole and the carrying amount of total equity on the ‘preliminary modified balance sheet (2)’ to the identified and non-identified intangibles as well as to all other tangible assets and liabilities)

Compare the fair value of the company, as calculated in step 6, with the carrying value of the equity on the preliminary modified balance sheet (2) (see also step 5). Use the difference and allocate it to (as far as applicable):

1) intangibles (identified under step 1),

2) other non separately identifiable intangibles (which should be rare),

3) tangible assets (to recognise any (additional) hidden reserves and potential burdens),

4) liabilities (to recognise any additional hidden burdens),

5) a residual item as the firm’s remaining fair value not distributable to any asset or liability from above referring to as ‘overall company structure-related intangible and tangible assets as well as liabilities dependent on the company as a whole’
(e.g. non-identifiable potential within the firm, etc.) (should normally be low in amount and rare in occurrence).

The allocation should be based on management’s best estimate of the weight of each component and consistent with the valuation of the company made in step 6. Apply the estimated allocation procedure consistently over the periods (e.g. the allocation could be similar to that of the FiMIAM model)\(^{98}\).

8. Step (Recognition and presentation of the non-identified intangibles, tangible assets and liabilities calculated in step 7):

The respective amounts calculated under step 7) [1) to 5) in step 7 above] should be shown:

- for intangibles already identified (step 1) and valued (step 2) as well as recognised on the preliminary modified balance sheet (1) [1) in step 7]:

  for each identified intangible as an ‘addition [or reduction, if applicable] from company structure-related ... [name of intangible] dependent on the company as a whole’ (the structure-related value of each intangible or intangibles linked to the company as a whole). This is in contrast to the intangibles already valued on a single basis, which should be shown as intangibles individually valuable (refer to steps 1–3).

- for the intangibles not identified under 1) and not recognised in step 3) but identified and valued in step 7) [2) in step 7]:

\(^{98}\) Note, this approach can also be explained as follows: First, the assets are valued individually and independently of their context (step 2). Afterwards the assets are revalued considering their use in the specific context within a company (step 7). Therefore, the first and second value may differ from each other and they may also differ from an estimated value of an independent third party. The latter values the asset under consideration on a stand-alone basis and adds to it the value which it brings to this party because of its use in his/ her specific context. Therefore, the value as measured here refers to the concept of value as discussed in section 2.3.1 which goes back to the concept of usefulness for an individual party.
as an ‘addition to [or reduction, if applicable] from company structure-related ... [name of intangible] solely dependent on the company as a whole’

- For all other tangible assets [3] in step 7:

  as an ‘addition [or reduction, if applicable] from company structure-related ... [name of tangible asset] dependent on the company as a whole’

- For all other liabilities [4] in step 7:

  as an ‘addition [or reduction, if applicable] from company structure-related ... [name of liability] dependent on the company as a whole’

- For asset(s) dependent on the company as a whole (primarily intangibles are expected) [5] in step 7:

  as a one-line item referring to an ‘addition [or reduction, if applicable] from company structure-related residual value dependent on the company as a whole’

The counter entries are recognised as a special line item in equity, which is referred to as the ‘revaluation proportion of company structure-related ... [intangibles, tangible assets, liabilities and/or “value”, if applicable] dependent on the company as a whole’.

→ please note that four new line items in equity could arise from this exercise, one for each principal class: (1) intangibles, (2) tangible assets, (3) liabilities and (4) “value” as a residual from the allocation of the company’s fair value.

The preliminary modified balance sheet (2) plus the recognition of the amounts from above of the non-identified intangible and tangible assets as well as liabilities calculated under step 7 result in a modified balance sheet (3). In accounting terms, each difference identified above is debited (credited – if applicable) as a separate line item of the respective intangibles, tangible assets and/or liabilities presented as an addition (or deduction, if applicable) of ‘company structure-related ... [name of intangible, tangible asset and/or liability; or “value”, if applicable] or contingency
dependent on the company as a whole’ and credited (debited – if applicable) in equity as a special line item referred to as ‘company structure-related … [intangibles, tangible assets, liabilities and/or “value”, if applicable] dependent on the company as a whole’.
Summary of steps 1–8:

Balance Sheet (in accordance with current accounting standards)

- Fair Value Adjustments for Identifiable Intangible Assets

Preliminary Modified Balance Sheet (1) (step 3)

- Fair Value Adjustments for Single Tangible Assets & Liabilities

Preliminary Modified Balance Sheet (2) (step 5)

- Fair Value Adjustments for Structure Related Assets & Liabilities

Modified Balance Sheet (3) (step 8)

Full Fair Value Balance Sheet

An example of a revised balance sheet is presented in the following:
Additions from company structure related residual value dependent on the company as a whole (residual from valuation of knowledge assets)

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**PP&E**

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</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>52</td>
</tr>
</tbody>
</table>

**Provision**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>56</td>
</tr>
</tbody>
</table>

**Bank Overdraft**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>44</td>
</tr>
</tbody>
</table>

**Equity**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>1736</td>
</tr>
</tbody>
</table>

**Share Premium**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>70</td>
</tr>
</tbody>
</table>

**Retained Earnings (incl. P&L of year end)**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>95</td>
</tr>
</tbody>
</table>

**Revaluation Reserves for knowledge assets (net of 30% tax)**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revaluation portion of knowledge assets separately identifiable</td>
<td>217</td>
</tr>
<tr>
<td>Revaluation portion of company structure related knowledge assets dependent on the company as a whole</td>
<td>28</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>245</td>
</tr>
</tbody>
</table>

**Revaluation reserves for tangible assets (and liabilities) (net of 30% tax)**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revaluation portion of tangible assets (and liabilities) separately identifiable</td>
<td>14</td>
</tr>
<tr>
<td>Revaluation portion of company structure related tangible assets (and liabilities) dependent on the company as a whole</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>21</td>
</tr>
</tbody>
</table>

**Revaluation reserve for company structure related residual value (net)**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revaluation portion of company structure related residual value dependent on the company as a whole</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>7</td>
</tr>
</tbody>
</table>

**Other Revaluation Reserves**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>65</td>
</tr>
</tbody>
</table>

**Equity Share Capital**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>120</td>
</tr>
</tbody>
</table>

*Figure 4.5: Example of revised balance sheet as part of the new IDF model*
A more detailed presentation with a breakdown of the single intangible elements should be used as a basis for the notes disclosure:

![Figure 4.6: Example of revised balance sheet with breakdown by single intangible elements as part of the new IDF model](image)
The following example shows the general differences on the face of the balance sheet between current intangibles reporting such as under IFRS and intangibles reporting using the new IDF:

<table>
<thead>
<tr>
<th>Example Balance Sheet as of period end (without tax)</th>
<th>today</th>
<th>new model</th>
<th>today</th>
<th>new model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company structure related residual value</td>
<td>3</td>
<td></td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>revaluation of knowledge assets (structure related)</td>
<td>12</td>
<td>revaluation reserve knowledge assets (structure related)</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>revaluation of knowledge assets (stand-alone)</td>
<td>11</td>
<td>revaluation reserve knowledge assets (stand-alone)</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>intangible assets (currently reported)</td>
<td>6</td>
<td>revaluation reserve tangible assets/liabilities (structure related)</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>revaluation of PP&amp;E at fair value (structure related)</td>
<td>23</td>
<td>revaluation reserve tangible assets/liability (stand-alone)</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>revaluation of PP&amp;E at fair value (stand-alone)</td>
<td>23</td>
<td>Other current revaluation reserves</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>tangible assets</td>
<td>12</td>
<td>Retained earnings</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>other assets</td>
<td>15</td>
<td>loans</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td>cash &amp; equiv.</td>
<td>10</td>
<td>other liabilities</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>43</td>
<td>103</td>
<td>43</td>
<td>103</td>
</tr>
</tbody>
</table>

Note (1): in the accompanying notes a break-down of the different intangible components with their value will be shown, e.g. customer list, research activities, knowledge of the people and the company, etc.

Note (2): in the accompanying notes those different intangibles are explained and linked to the company's objectives/strategies

Note (3): the value of each intangible asset can be reconciled to the company's fair value and verified in the accompanying notes

Figure 4.7: Illustration of differences between current intangible reporting and intangible reporting using the new IDF model
(2) Disclosures

9. Step (Reconciliation of valuation report with the company’s book value – equity reconciliation)

The presentation of a comprehensive reconciliation with the fair value of the company according to the valuation report and the book value of it by allocating the difference to the

- ‘revaluation proportion of intangibles separately identifiable’,
- ‘revaluation proportion of tangible assets and liabilities separately identifiable’ and
- ‘revaluation proportion of intangibles not separately linked to the company as a whole’.
- ‘revaluation proportion of tangible assets and liabilities dependent on the company as a whole’.
- ‘revaluation proportion of company structure-related (residual) value dependent on the company as a whole’

10. Step (Movement schedule for equity from the prior period to the current period, particularly for revaluation reserves)

A movement schedule, particularly for revaluation reserves, could be presented as follows. Explanations should be provided for the most significant movements of items within the schedule.

<table>
<thead>
<tr>
<th>Asset/Liability Class</th>
<th>Prior Year Value</th>
<th>Additions</th>
<th>Disposals</th>
<th>Increase due to revaluation</th>
<th>Decrease due to revaluation</th>
<th>Current year value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
</tr>
</tbody>
</table>

*Figure 4.8: Movement schedule for intangibles related entries*
11. Step (Extensive discussion for each significant identified standalone and linked intangible in the notes):

In addition, each significant intangible value, the standalone part and the part linked to the company’s overall value, should be extensively described (e.g. why these identified intangibles were chosen, how the linked part is interrelated to the company, what are the value drivers and assumptions resulting in the value of that intangible, what are the expected cash flows from each intangible, etc.).

12. Step (Brief discussion of each significantly revalued standalone tangible asset and liability as well as for the respective revaluation proportions of each tangible asset and liability linked to the company’s overall value in the notes):

Each tangible asset and liability that were significantly revalued should be extensively described (why the significant revaluation of this tangible asset and/or liability occurred, how the linked part is interrelated to the company, etc.).

13. Step (Presentation of the valuation report in the notes including the fair values of each identified intangible, tangible asset and liability):

A summary of all significant information including the assumptions made and results stated in the company’s valuation report should be presented in the notes, including each significant component for all years considered in the valuation model. The rationale behind this is to give the reader the possibility to verify and reconcile easily management’s estimate about the company’s fair value.

14. Step (Extensive discussion about the procedure to allocate the difference between the company’s fair value and its book value adjusted by (re-)valuations for identifiable intangible and tangible assets as well as liabilities):
The allocation procedure of the remaining difference (fair value of equity minus carrying amount of equity on the ‘Preliminary Modified Balance Sheet (2)) to structure dependent items should be clearly explained; this is essentially a detailed explanation of step 7. The relative weights used for the allocation (i.e. the metric (numerical) basis for the allocation) for each intangible and tangible asset should be explained as well. These relative weights should be compared in the next year with the prior years’ keys to show their consistent application. Comparisons should include three to five periods.

15. Step (Comparison of projected figures used in the valuation report and the respective actual figures for the same periods):

For each following year, a new or updated valuation report should be presented. However, the first projected year of the last year’s valuation report should also be compared with the actual figures of that respective period just past (actual vs. projected). Any further period should add a further period leaving at least three past periods with actual figures compared with equivalent projected figures from historical valuation reports. The following picture shows this procedure graphically:

Figure 4.9: Comparison between projected figures in past valuation reports and actually realized figures

The “initial plan” includes as components future cash flows and interest rates. The “revised plan” a period later includes the same components with revised figures, e.g., revised future cash flows and interest rates. The “actual” results comprise the same
components as the initial and revised plans, but the figures become real, i.e. actual, in the last period. The reason for that is to show the readers the reliability of management’s estimates and statements. In addition, the difference between the initially estimated/projected figures and actual figures should be discussed by management in the notes. The reliability of the value of intangibles is also validated in this step.

16. Step (Each intangible value presented on the face of the balance sheet should be compared with the value in the past three to five years):

Each single intangible value should also be compared and shown with the past three to five periods. Management should discuss any significant movements.

17. Step (Discussion by company’s management of how the fair value of the company as a whole and each single standalone and linked intangible relates to the company’s objectives and strategies):

Finally, management should discuss in the notes how the fair value of the company as a whole and each particular intangible on an individual basis, either separable or interrelated with the company, as well as structural tangible value are linked to the company’s strategy and objectives (management could use, as a guideline, a widely known intellectual capital approach as a structure for this reporting). By doing so, the company’s objectives and strategies are linked to the fair value of the company (as well as to its budget) and to the value of each intangible. By doing this, however, management is implicitly forced to actively manage its hidden assets.

4.4 Summary and outlook

The chapter discussed general model building theory and how it is associated with inductive and deductive empirical research in social sciences in general as well as financial accounting model development and the development of a new IDF in
particular. It became evident that traditional accounting model development based on stipulated conventions does not correspond to modern model building theory. Furthermore, it supports the need for CondNAT, which better reflects financial accounting-related phenomena in the real world in accounting principles and regulations.

After having developed the new IDF, its acceptability and usefulness will be ‘back-tested’, i.e. validated in the next chapter to assess the validity of the previous results derived from the inductive research with stakeholders. Moreover, it will be also clarified where the IDF should be disclosed, i.e. in current financial statements as an integral part, attached or separated from them as usefulness and acceptability might also be dependent on where such an IDF is disclosed. A preliminary proposition is that the IDF is useful and acceptable and that it should be disclosed as an integral part of current financial statements. This will be further discussed in the next chapter.
Chapter 5 – Validating the new IDF model

5.1 Introduction

In the last chapter, a new IDF model was developed. In this chapter, the preliminary stipulation of the representational function of the IDF model is validated as discussed in section 4.2. In particular, the usefulness of the model is validated in a deductive manner with various constituencies and a representative of a financial accounting standard setter. In this respect, it also contributes, together with the previous chapters, to the field of CondNAT.

5.2 Research methodology

5.2.1 Research objectives

In previous chapters, various components were identified to improve the current financial reporting practice with regard to intangibles and an enhanced IDF model developed. The objective of this part, which corresponds to the fourth research objective of this study as described in chapter 3, is to validate the acceptability and efficacy of the model derived with all the constituencies identified above. In particular, the usefulness of the new IDF model as developed and discussed in chapter 4 is validated as well as it is discussed with the interviewees where the most suitable place of the new IDF model in the context of current financial reporting might be from a user’ perspective (integrated vs. outside current financial reporting).

The research objective of this chapter is an integral part of the overall research objectives laid down in chapter 3.2.1. The next section describes the research strategy for the objectives described above.

5.2.2 Research strategy

To achieve the research objectives described in the previous section, a qualitative research strategy was chosen, as the aim is to gain an in-depth understanding of the
usefulness and adequacy of the model for financial statements users and accountancy bodies.

The particular interest of this part of the research is in obtaining in-depth feedback on all different components and their composition in the newly developed IDF model. Furthermore, this research part should allow arriving at a conclusion about whether these different components and the new IDF model in its entirety improve current intangibles accounting and related disclosures for financial reporting. Finally, this research part should clarify the most suitable position in the context of current financial reporting for the new IDF model.

Therefore, a qualitative research strategy was chosen consistent to the qualitative research strategies previously applied. Interviews were less structured with several semi-structured questions used as an interview guide. According to Elliot (2005, 2007), Creswell (2007), Holliday (2002) and Bryman (2001), such interviews allow the author to obtain a broad, deep and unique insight into the views and understanding of interviewees, which is particularly needed to validate this new IDF model (refer to section 3.2.2 for further details).

5.2.3 Research design

The research design for this empirical research part is similar to that previously adopted and described in section 3.2.4. The main difference compared with section 3.2.4 is that the new IDF model is used here as a case that is intensively examined with experts and users of external financial reports. Therefore, the research design of this research part also relates to a case study (Corbin and Strauss, 2008; Stake, 2005; Bryman, 2001). In this regard, the research design adopted here could also be understood as complementary to the research designs described in section 3.2.4. A more in-depth discussion about research designs in relation to qualitative research strategies and in particular to case studies is also provided in section 3.2.4.

A case study design is adopted for this study to discuss the new IDF model with experts and to obtain rich insights and feedback from them on the newly developed IDF model within a reasonably structured framework. The case study approach
adopted in this study helps develop new theory in a field, CondNAR with limited prior research, but which is particular relevant for the development of useful financial statements.

5.2.3.1 Data collection

5.2.3.1.1 General data collection procedures

In this section, the data collection procedure is discussed in more detail. It is established in the context of this overall empirical research study to achieve the research objectives. Details as regards sample selection and entering the field as well as on data analysis follows this section.

An interview guide with semi-structured questions was used for collecting data. Such semi-structured questions give interviewees much freedom to express their points of view, allowing for rich insights into their views and enabling a full understanding of their opinions and thoughts concerning the new IDF model. They also provide a certain guidance and structure for the interviewer and subsequent analysis (Creshwell, 2007; Elliot, 2007; Horton et al., 2004; Bryman, 2001). Even though respondents were free to answer in detail and length if needed and could comment on the model beyond the specific questions, the questions were used to enable the researcher to ensure that all relevant topics were covered and discussed with interviewees. Therefore, interviews were not fully unstructured. They allowed much freedom in responding to the questions, leading to a data collection approach that could be rather seen as between semi-structured and unstructured. For a more in-depth discussion of data collection approaches and the difference between semi-structured and unstructured interviews, refer to section 3.2.4.

In the following, interviews are referred to as semi-structured considering that a predefined list of semi-open questions in the interview guide was used and no particular additional questions were raised during the interviews.
Telephone interviewees were set up and lasted about 1 hour. Interviewees received the questionnaire (including model description) before the semi-structured interviews took place. Interviewees could be generally distinguished into two groups:

- The financial accounting standards setter, as an expert in the external financial reporting field, and a regulator, stipulating and publishing new normative accounting rules.
- A group of financial statements users and parties concerned with financial statements such as consultants specializing in mergers and acquisitions (M&A), auditors and investors.

Figure 5.1: Financial reporting and its relation to regulators and users

As discussed in section 2.2.1.1, the purpose of financial reporting is to provide financial information about a reporting entity that is useful to external parties such as existing and potential investors, lenders and other creditors in making decisions about providing resources to the entity (OB2 of IASB, 2010). A similar definition has been adopted by the AASB (2013). Therefore, financial reports are prepared by companies for the benefit of users of such financial information based on rules stipulated by financial accounting standards setters.
Financial accounting standards setters stipulate the rules for financial reporting. The IASB\textsuperscript{100} and AASB are such financial reporting standards setters (independent standards setting bodies). Their board members are responsible for the development and publication of new standards (IASB, 2013; AASB, 2013). As further explained in the next section, the IASB is the leading financial accounting standards setter in the world. Their issued IFRS are either directly applicable in many countries in the world or are adopted by local accounting standards setters (e.g. AASB, 2013). After a due process of endorsement, the IFRS and related interpretations have also been adopted in the form of European Regulation and have become law in the European Union. Hence, the IASB is afforded a great, perhaps even the greatest, importance in the financial reporting standards setting process worldwide. This is also the reason why the IASB was contacted to represent the financial accounting standards setter in this study (for further details refer also to section 5.2.3.2).

Another view on financial accounting standards setters is that an acceptance of the new IDF model only by them could mean a general acceptability of the model, at least on a technical financial accounting level, as they traditionally stipulate accounting standards (refer to section 4.2.3) without deriving them from sound empirical research—i.e. disregarding the actual views of users. Acceptance by a financial accounting standard setter therefore may be taken as an indication that the new model is a significant contribution to NAT. However, they do not represent the users of financial statements; they do not have deep insights into the financial statements users’ needs. They are experts in drafting and developing authoritative financial accounting rules. They are first and foremost normative financial accounting experts in a political environment (refer to section 4.2.3) having the authority to stipulate financial accounting rules. Although they try to anticipate and respond with new standards to the users’ needs, they do not represent them. Therefore, the interview with the standard setter may help understand the technical eligibility of the new IDF model to enter into the due standard setting process—i.e. whether or not the model is worth putting forward in the standard setting process.

\textsuperscript{100} In the UK, the Financial Reporting Council assumed responsibility for accounting standards on 2 July 2012. Its role is to issue financial accounting standards. Before, accounting standards were developed by the Accounting Standards Board (Financial Reporting Council, 2013). The Financial Reporting Council also collaborates with the IASB to influence the development of international standards and ensure that its standards are developed with due regard to international developments.
from a technical and formal point of view—but it may not be a proxy for the usefulness of the IDF model for financial statements users.

In determining the usefulness of the new IDF model, the set of interviews with the financial statements users are paramount. The relevance of the group of financial statements users is also described in detail in section 3.2.4.2. They consist of a group of M&A consultants, auditors and investors from different industries in this empirical research part. They were interviewed as proxy for financial statements users, as they either use financial statements and base their decisions on them (investors) or are directly concerned through their agency relationships with the users (auditors and M&A consultants). Therefore, they are users to the extent that such statements are necessary to fulfil their duties. The latter group was mainly selected for two reasons: First, they are specialized in understanding external reporting systems and extracting the information they need for a particular purpose. Second, fewer investors compared with the first part of the empirical research (refer to chapter 3) were willing to participate in interviews and, therefore, other parties who were also concerned by this newly developed IDF model and who could provide useful insights into the decision-usefulness of the new model were chosen as acceptable proxies for other investors.

An in-depth examination of the new IDF model with these two main groups (financial accounting standards setter and financial statements users) does not only ensure that the new IDF model is developed based on the needs and requirements of financial statements users. It also allows alignment of the new IDF model with the particular views and requirements of financial accounting standard setters. Moreover, the latter even paves the way for bringing traditional NAT together with CondNAT.

Two different guides for the semi-structured interviews were used for these two groups, i.e. the financial accounting standards setter representative and the group of financial statements users, as they are concerned in different ways. Generally, the interview with the representative of the financial accounting standard setter\(^{101}\) was carried out to obtain insights from a technical expert of financial statements on the

\(^{101}\) Refer to section 5.2.3.2 regarding the person interviewed.
newly developed IDF model as well as to understand the acceptability of this new model for an accounting standards board.

At the beginning of each interview, the model was explained and interviewees were asked to summarise their understanding of the model in their own words. In addition, the model was validated through in-depth discussions about the various steps and elements of the model with interviewees in order to understand whether:

(a) it is decision-useful and provides useful, i.e. reliable (refer to section 2.2.1.2) and relevant, information about an entity’s intangible resources;
(b) there are particular constraints for it (e.g. cost vs. benefit); and
(c) the new model would improve current financial statements overall.

Finally, it was also investigated the most suitable position of the new IDF model in the context of external reporting from interviewees’ points of view, i.e. integrated in currently published financial statements, attached to currently published financial statements with reconciliation with financial statement figures and information or as supplementary information separated from currently published financial statements.

All interviews were taped and transcribed. They were coded and analysed thematically (Gomm, 2008; Elliot, 2005; Bryman, 2001). All questions were linked to the propositions in order to confirm or disprove them. The propositions were used to validate various aspects of the new model as well as the model in its entirety. Therefore, this part of the research is deductive in nature, as a developed disclosure model as part of broader theory was validated empirically.

5.2.3.1.2 Data collection relating to the accounting standards setter

As discussed in section 5.2.3.1.1, a representative of a financial accounting standards setter as well as a representative group of financial statements users was interviewed. This section provides details about the different propositions raised and related questions relevant for the validation of the new IDF model with this interviewee as a representative of a financial accounting standard setter.
P10: The newly developed IDF model should be part of current financial statements, either as an integral part or attached to them.

This proposition (P10) emerged from the results of the first part of the empirical research (refer to chapter 3). Interviewees only wish to see additional intangibles related information integrated into current financial reporting if such information is reliable, i.e. verifiable from their points of view (refer to Q_3.1 relating to P7 in section 3.3.4). One investor suggested providing such information outside current financial reporting if such information is not sufficiently reliable. In the literature, only two approaches are discussed: integrating into the current financial reporting framework (refer to section 2.2.1) or disclosing such information outside and independent from current financial reporting (section 2.2.2).

In addition to these two alternatives, the researcher believes that there is another alternative, which is not discussed in the literature: the new IDF model could be attached to the financial statements, i.e. associated with current financial reporting in a way that the information in the IDF model could be reconciled with the information provided in the financial statements. This might be particularly useful if the new model is considered to be useful and an enhancement to current financial reporting, but the changes to the current elements of financial reporting would be regarded as overwhelming, i.e. too many changes at once. By way of attaching it to the current framework, it should be consistent with it, but at the same time, financial statements users could learn to work with it together and align it with current financial reporting. Therefore, one of the main questions for any change relating to current financial reporting is whether the new IDF model should be:

- properly integrated into the existing financial accounting framework,
- associated with such a framework without following all its accounting rules (e.g. not applying accounting standards relating to intangibles such as IAS 38) or
- fully disconnected from any financial accounting framework.
All three approaches have different implications. If changes are made within the existing accounting framework, the respective rules have to comply with the accounting framework, but also with other related accounting rules. Any necessary modification to current accounting rules has to be thoroughly developed, documented and integrated into the accounting framework under consideration and must be consistent with other related accounting rules. The development of new accounting rules contributes to traditional NAT.

Changes to financial reporting that are not integrated into the existing accounting framework but are associated with it should be consistent with the current accounting framework under consideration. However, these changes do not need to comply with all current accounting standards, which is not possible if IAS 38 is taken as an example. The new IDF model differs from this standard, as it significantly improves current accounting rules for intangibles. Current accounting rules may only be complemented by rules describing the requirements for such complementary reporting. The latter refers to the rules of the new IDF model. Information in the new IDF model should be reconcilable and consistent with the existing financial reporting framework. The new model and reconciliations should also be explained.

Compared with the first two approaches, the third approach means that the IDF model is fully disconnected from the current financial reporting framework. All new rules and formats are fully independent and disconnected from any current accounting framework and related rules. Content, format, rules and other-related aspects are arbitrarily established in respect to existing accounting frameworks.

Following the discussion above, the interviewee is asked the following question to obtain his general view on whether a new intangibles related model should be integrated, attached or disconnected from current financial reporting. This question is posed, as a representative of a financial accounting standard setter is certainly aware of the implications and he can provide initial feedback on this issue before having discussed the new model. This question might also identify some initial dogmatic influences against significant changes to existing accounting rules, which could exist before having discussed the new model in more detail. The issue of the most suitable
position for a new intangibles related model is addressed more specifically in a later stage.\footnote{Refer to Q_5 of proposition 2 for the accounting standards setter representative.}

\textit{Q 1: Assuming a Knowledge Valuation and Reporting Model (KnowVRM) exists, what would you prefer as a communication/reporting tool?}

\begin{itemize}
\item[\textit{a})] Integrated into currently published financial statements;
\item[\textit{b})] Attached to currently published financial statements with reconciliation with the financial statements’ figures and information;
\item[\textit{c})] Supplementary information separated from currently published financial statements (similar to environmental, social and ethical reporting);
\item[\textit{d})] Do you have any other suggestions on how to communicate such a KnowVRM? Please state:
\end{itemize}

Another key issue with any change in an accounting framework relates to the reliability of the new information. Reliability refers to the qualitative characteristics of decision-useful information as discussed in section 2.2.1.2. Compared with the IASB (QC4 of CFFR issued by the IASB), the results in chapter 4 show that constituencies have a different understanding of what reliability means, i.e. they associate with reliability transparency, openness and particularly verifiability, which do not belong on the list of the fundamental qualitative sub-characteristics of reliability according to the IASB’s CFFR (refer to section 2.2.1.2). However, apart from these different understandings of what reliable information constitutes, the results from the interviews showed that constituencies generally regard reliable information as an important characteristic of a new intangibles related model (refer to chapter 3). As constituencies refer to the need for information to be verifiable to become reliable (chapter 3), the new IDF model is based on such a view. Therefore, the new IDF model has to be validated in particular with the representative of the financial accounting standard setter, in addition to financial statements users to understand whether it should also be reliable from his point of view as a
representative of a financial accounting standard setter. Therefore, the following proposition was raised:

**P11: The new model should provide reliable information at least to a certain degree and should not be fully arbitrary.**

One way of enhancing the reliability of financial information may be an external audit of such information. If changes, such as a new IDF model, are integrated into current financial statements, they automatically become part of the financial statements and related audits and, therefore, they are also subject to the independent opinions of external accountants about whether such information is free from material mistakes. However, if the model is only attached, associated or even separated from current financial statements (such as management discussions and analysis reports are), it is important to understand whether this model should have similar assurance to current financial statements or not. Audited financial statements generally provide a higher degree of reliance through the respective assurance engagements with auditors as independent third parties (e.g. refer to International Standards on Auditing).

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103 According to International Standard on Auditing (ISA) 200, Para. 13 (f) (International Federation of Accountants (IFAC), 2012), financial statements are a structured representation of historical financial information, including related notes, intended to communicate an entity’s economic resources or obligations at a point in time or the changes therein for a period of time in accordance with a financial reporting framework. The related notes ordinarily comprise a summary of significant accounting policies and other explanatory information. The term “financial statements” ordinarily refers to a complete set of financial statements as determined by the requirements of the applicable financial reporting framework. The related notes are generally integral part of financial statements (ISA 200, Para. 13 (a)).

According to ISA 200, Para. 13 (g), historical financial information is information expressed in financial terms in relation to a particular entity, derived primarily from that entity’s accounting system, about economic events occurring in past time periods or about economic conditions or circumstances at points in time in the past.

104 According to ISA 200, Para. 3, the purpose of an audit is to enhance the degree of confidence of intended users in the financial statements. This is achieved by the expression of an opinion by the auditor on whether the financial statements are prepared, in all material respects, in accordance with an applicable financial reporting framework. In the case of most general purpose frameworks, that opinion is on whether the financial statements are presented fairly, in all material respects, or give a true and fair view in accordance with the framework. An audit conducted in accordance with ISAs and relevant ethical requirements enables the auditor to form that opinion.

105 According to IFAC Para. 11 (International Federation of Accountants (IFAC), 2012), in conducting an audit of financial statements, the overall objectives of the auditor are:
Federation of Accountants (IFAC), 2012b, https://www.ifac.org/auditing-assurance/auditor-reporting-iaasbs-1-priority). Non-audited or non-reviewed financial statements are fully reliant on preparers’ honesty and accuracy when they are prepared and, therefore, subject to a higher risk and degree of manipulation. This issue is particularly interesting from a financial accounting standard setter point of view, as the literature review suggests an implied rule: financial statements such as those prepared under IASB rules are audited and all other information as described in section 2.2.2 are not. Therefore, the following question is asked:

**Q_2: Do you think such a KnowVRM should be audited or reviewed by an independent accountant?**

This question is important as the answer could indicate a possible position for the new IDF model in relation to current financial statements from the point of view of the representative of the financial accounting standard setter. Moreover, the results would also indicate whether such a new IDF model is at all acceptable. A rejection of an audit requirement as well as a suggestion to fully disconnect the new IDF model from current financial statements could be interpreted as an overall refusal of this new model. Following the above discussion and Q_2, it was important to ask a more

(a) To obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, thereby enabling the auditor to express an opinion on whether the financial statements are prepared, in all material respects, in accordance with an applicable financial reporting framework; and

(b) To report on the financial statements, and communicate as required by the ISAs, in accordance with the auditor’s findings.

The auditor’s report is the auditor’s primary means of communication with an entity’s stakeholders. As such, it has to be meaningful and have value for them (IFAC, (2012). https://www.ifac.org/auditing-assurance/auditor-reporting-iaasbs-1-priority, retrieved on 22 September 2012).

106 According to International Standards on Review Engagements 2400, Para. 3 (International federation of Accountants (IFAC), 2012), the objective of a review of financial statements is to enable a practitioner to state whether, on the basis of procedures which do not provide all the evidence that would be required in an audit, anything has come to the practitioner’s attention that causes the practitioner to believe that the financial statements are not prepared, in all material respects, in accordance with the applicable financial reporting framework (negative assurance in contrast to an audit that provides positive assurance).
specific question to allow a differentiated analysis of the different levels of reliability expected by the interviewee.

*Q 3: What level of reliability would you prefer?*

- *Reasonable assurance based on an audit;*
- *Moderate level of assurance (negative assurance) based on a review;*
- *Consistency with other audited financial statements information;*
- *No assurance.*

As discussed in section 2.2.1, information in current financial reporting such as that promulgated by the IASB must meet various conditions. Moreover, changes to the current rules must be consistent with the CFFR, as explained in sections 2.2.1.1 and 2.2.1.2. However, these specific requirements are developed and set by an accounting standards setter such as the IASB based on the following overarching objectives (IASB, 2013):

- Developing a single set of high quality, understandable, enforceable and globally accepted IFRS through its standards setting board, the IASB;
- Promoting the use and rigorous application of those standards;
- Taking account of the financial reporting needs of emerging economies and small and medium-sized entities; and
- Bringing about the convergence of national accounting standards and IFRS to high quality solutions.

The financial reporting promulgated by accounting standards setters should follow these objectives (IASB, 2013). Related standards and concepts have to be modified or replaced, as the case may be, if they no longer support the achievement of these objectives. Any modifications and replacements have to follow the due process described in chapter 4 (refer also to IASB, 2012).
As a consequence, financial accounting standards setters might accept the new IDF model even if it does not comply with all current standards and conceptual requirements as long as it could better achieve the principal objectives. This is important to recognise, as the new IDF model requires changes to current reporting rules such as IAS 38. However, it is claimed in this thesis that it also enhances the quality of current financial reporting, which is an important objective of the IASB.

Therefore, the general acceptance of the new IDF model as either an integrated part or directly associated with current financial statements would mean that the new model complies with these objectives. This would not only mean that the new model could become part of a general standards setting process and that it might become applicable for a broad audience in the future. It would also mean that the new model already fulfils certain minimum acceptability criteria and that it has the power to improve current standards such as IAS 38 and IFRS 3 in respect to intangibles with regard to, for example, quality and understandability. The acceptance of the model by an accounting standards setter may also provide affirmation of the general usefulness of the model from a standards setter’s point of view (see sections 2.2.1.2 and chapter 4). Therefore, the following proposition was raised to further investigate the acceptability of the new IDF model by an accounting standards setter:

**P12: The new IDF model is acceptable for an accounting standards body as an external financial reporting framework either integrated into or associated with current external financial reporting frameworks.**

This proposition was validated with the interviewee through a detailed discussion about the IDF model and its various elements. To prompt a detailed discussion about the acceptability of new IDF model and its various elements, the following question was asked:

**Q 4: What do you think about the enclosed KnowVRM?**
The importance of this question also follows from the literature review, particularly from the discussions in section 2.2.2. Most of the intangibles related reporting models suggested in the literature as alternatives to current financial reporting do not only lack of validity and broad acceptance (Dumay, 2009; Choong, 2008; Andriessen, 2004a; Kaufmann et al., 2004), they are also not regarded as suitable for audited financial statements (Samudhram et al., 2008; FASB, 2001). This question about a more open style also allows for in-depth discussions about critical issues the interviewee might see relating to this new model. This ensures that the issues raised by the Financial Accounting Standards Board (FASB) in the course of its critical assessment of currently proposed alternative intangibles related models could be directly discussed and do not need to be left unresolved (FASB, 2001).

Moreover, this question also provides the unique opportunity to link the new IDF model to the expectation of an accounting standards setter as the pivotal body in NAT. The related discussion will pave the way for bridging the two fields of accounting theory: traditional NAT and CondNAT.

The discussion relating to Q_1 provides the general reason for such a question. However, Q_1 aims at understanding the general view of the interviewee relating to any intangibles related model, whereas Q_5 was asked specifically in respect to the new IDF model:

**Q_5: What do you think now after becoming acquainted with the KnowVRM from above (Question No. 4): Which communication/ reporting tool is the most appropriate one for a Knowledge Valuation and Reporting Model such as described with the KnowVRM in the Appendix (Question No.4)?**

- e) Integrated in currently published financial statements;
- f) Attached to currently published financial statements with reconciliation with the financial statements' figures and information;
- g) Supplementary information separated from currently published financial statements (similar to environmental, social and ethical reporting);
h) *Do you have any other suggestions how to communicate such a Knowledge Valuation and Reporting Model? Please state:*

This question not only helps assess the acceptability of the model from the interviewee’s point of view, but also helps understand the most suitable position for the new IDF model. The latter should even help specify and underpin the claim in favour of the new IDF model.

The detailed discussion about the new IDF model could make the interviewee much more aware of specific critical issues, which he might not have considered. As a consequence, he could not only have a different view about the most suitable position for the new IDF model in the context of financial reporting, but he could even change his general view compared with the same question at the beginning of the interview. These two questions (Q_1 and Q_5) are important to understand whether the new IDF model has caused a change in his initial general view on intangibles related disclosure models. Different views could indicate something specifically positive or negative in the new IDF model.

As already indicated in the discussion relating to Q_2, it could be argued that if the standards setter prefers to have the new model integrated within or closely associated with current financial statements, it would mean that it recognises the new model as high quality and useful for current financial statement users. On the other hand, if the accounting standards setter prefers the new model to be independent of current financial statements, it could be concluded that the proposed IDF model does not meet the expectations and requirements of an accounting standards setter. However, the preference for independent disclosure from current financial statements could also indicate that the model is too innovative, which does not fit at all into the current accounting and disclosure model.
5.2.3.1.3  Data collection relating to financial statements users

As discussed in section 5.2.3.1.1, a representative group of financial statements users was interviewed in addition to the representative of an financial accounting standard setter. This section provides details about the different propositions raised and related questions relevant for validating the new IDF model with this group of financial statements users.

The purpose of the first question is to verify whether interviewees have fully understood the new IDF model. In case the main principles are not clear and/or could not be correctly repeated, the model would be explained again. This first phase of the interview should ensure that subsequent questions can be reasonably answered.

Q 1: Please could you give a brief description of the model in your own words and based on your understanding?

P2 refers to the discussion in section 2.2.1.1 about the usefulness of information in financial reporting. Current financial reporting lacks decision-useful information, which is in particular caused by the lack of decision-useful information relating to intangibles (refer to chapter 4). As also shown in the next chapter, decision-usefulness is the key criterion for financial statements users to accept or reject the new IDF model. Only if the information relating to the IDF model is useful, it has the power to enhance the quality of current financial reporting for users as discussed in the next sections. Therefore, the general acceptability of the new IDF model is validated by the following proposition:

P13: The new model is regarded as useful by financial statements users.
As the new IDF model is derived from and built upon the requirements and expectations expressed by financial statements users (refer to previous sections), it is assumed that this new model is properly developed and therefore useful for them.

The following Q_2a to Q_5b relate to P13. They are posed along with the various sub-objectives financial reporting should meet and qualitative characteristics useful financial information should have according to a financial accounting standards setter such as the IASB. Following previous chapters, IASB’s CFFR is also used here as a reference for these sub-objectives and qualitative characteristics.

The overarching objective that financial reporting should meet is providing useful financial information (OB2 of IASB (2010)), although current financial reporting does not achieve this objective in all respects as discussed in chapter 3. As explained above, this is also due to the lack of useful intangibles related information (refer to chapter 3).

To provide detailed feedback about the usefulness of the new IDF model for financial statements users, the new IDF model is compared with the IASB’s expectations. In this way, not only the usefulness of the new IDF model for financial statements users is validated, the model is also validated along with the IASB’s sub-objectives and fundamental characteristics of useful financial information. Therefore, Q_2a to Q_5b are posed to verify whether the new IDF model meets the various sub-objectives and fundamental characteristics of useful financial information. Confirmation of these criteria would correspond to the overall usefulness of the IDF model in accordance with the IASB’s CFFR.

The interviewees were asked Q_2a as a sub-objective of the overall objective of usefulness (refer also to section 2.2.1.1) is to provide financial statements users information that should help them assess future cash flows (OB3 and OB4 of IASB (2010)) as well as how efficiently and effectively an entity’s management and governing board have discharged their responsibility to use the entity’s resources (OB4 of IASB (2010)): 
Q_2a: From your point of view, is the proposed model (KnowVRM) decision-useful, i.e. useful in assessing cash flow prospects and in assessing stewardship of a company?

Q_2a forces interviewees to take a clear position. However, to understand the reason for their choices, but also to know possible limitations and conditions the interviews would like to express, Q_2b is asked to allow them to freely explain their choices.

Q_2b: Why do you think that the model is decision-useful?

Interviewees were asked Q_3a as another sub-objective of the overall objective of usefulness to provide specific feedback about the financial position of a company, which is information about an entity’s economic resources, claims against the company or specific events that change a company’s economic resources and claims (OB12 of IASB (2010)).

Q_3a: Do you think that the proposed model (KnowVRM) provides useful information about an entity’s economic resources, claims on those resources and changes in resources and claims as well as changes in resources and claims resulting from financial performance?

Similar to Q_2a, Q_3a forces interviewees to take a clear position. However, and similar to Q_2b, Q_3b is asked to uncover the reason(s) for interviewees’ choices for Q_3a.
Q_3b: Why do you think that the model provides such useful information, i.e. information about an entity’s economic resources, claims on those resources and changes in resources and claims as well as changes in resources and claims resulting from financial performance?

Starting with Q_4a, the objective of financial reporting to provide useful information is examined from the perspective of the qualitative characteristics useful financial information should have. The different qualitative characteristics of useful financial information according to the IASB’s CFFR are discussed in section 2.2.1.2.

Questions Q_4a and Q_4b relate to the relevance of the new model (OB6 of IASB (2010)) and its related fundamental qualitative sub-characteristics predictive and confirmatory value (QC7–QC10 of IASB (2010)) as discussed in section 2.2.1.2. Similar to questions Q_2a and Q_3a, Q_4a forces interviewees to take a clear position and Q_4b is asked to unfold the reason(s) for their choices for Q_4a.

Q_4a: From your point of view, is the proposed model (KnowVRM) relevant, i.e. does the model improve the predictive and confirmatory value of financial information?

Q_4b: Why do you think is the proposed model (KnowVRM) relevant, i.e. improve the predictive and confirmatory value of financial information?

As already highlighted in this section above (refer also to chapter 3), there is a different understanding between financial accounting standards setters such as the IASB (refer to section 2.2.1.2) and financial statements users relating to what reliable information is (refer to chapter 3). However, there is no disagreement that useful financial information should be reliable, as described in the IASB’s CFFR (QC4 and QC5). The difference mainly refers to the degree of importance the different
qualitative enhancing and sub-characteristics should have to establish reliable financial information (refer to chapter 3).

When validating the reliability of the new IDF model with Q_5a and Q_5b, reference to verifiability as a main characteristic of reliable information is made, as suggested by previous interviews with financial statements users (refer to chapter 4). Even though the reference is only a complement to the core of the question, this allows, in cases where an interviewee finds this complement relevant, aligning the overall objective of this research with the views of financial statements users, although the overall objectives and fundamental qualitative characteristics of the IASB are still respected.

As discussed in section 2.2.1.2, reliability and faithful representation have a similar meaning and they are used synonymously in this thesis. Similar to Q_4a, Q_5a forces interviewees to take a clear position and Q_5b is asked to uncover the reason(s) for their choices for Q_5a.

**Q_5a:** Does the proposed model (KnowVRM) present faithfully (reliable) financial reporting information, i.e. the information is verifiable?

**Q_5b:** Why do you think it represents faithfully financial reporting information?

The IASB states that cost is a pervasive constraint on the information that can be provided by financial reporting and that costs are justified by the benefits of reporting that information (QC35 of IASB (2010)). Generally, the IASB assesses whether the benefits of reporting particular information are likely to justify the costs associated with providing and using that information. This assessment is based on feedback from various sources such as providers, investors, analysts, lenders and auditors of such information (QC35 of IASB (2010)). Therefore, any new financial reporting model and any modification to existing financial accounting rules will be
subject to a cost/benefit assessment of the IASB based on the contributions of financial statements users.

In the literature, proposed new intangibles related disclosure\textsuperscript{107} models are deemed as useful. There is very little research about the usefulness of the various models from users’ points of view and none of them is validated empirically to assess whether the benefits outweigh their related costs to implement and maintain them (refer also to section 3.3).

The new IDF model is developed (as described in chapter 4) based on the needs and requirements of financial statements users (refer to chapter 3). The new model is generally regarded as useful and that the benefits outweigh the related costs and constraints. The general usefulness of the new IDF model is validated as described in this and in the previous section. The particular cost/benefit issue, which is usually not validated in the literature, is empirically validated by the following proposition:

\textbf{P14: The benefits of the new model outweigh the related constraints and costs in implementing and using it.}

Q_6a, together with Q_6b, is posed to understand, as a first step, whether interviewees see any difficulties or limitations to implementing and using the new model. Of course, any modification will have certain constraints. This question aims at understanding these constraints from users’ points of view. Whether they are overcompensated by the benefits is validated afterwards in a second step (refer to Q_7a and Q_7b).

\textsuperscript{107} The term “disclosure” used here refers to making intangibles related information known to external parties, i.e. it is broader than reporting under accounting rules (refer to the second paragraph of section 2.2).
Q_6a: Are there any constraints you might think about regarding the proposed model (KnowVRM) (e.g. cost vs. benefit)?

Q_6a forces interviewees to take a clear position and Q_6b is asked to uncover the reason(s) for their choices for Q_6a.

Q_6b: Which constraints do you think about?

Q_7a, together with Q_7b, is posed to validate, as a second step, whether these constraints are overcompensated by the benefits.

Q_7a: What do you think are the benefits or cost prevailing in applying this proposed model (KnowVRM)?

Similar to Q_6a, Q_7a forces interviewees to take a clear position and Q_7b, similar to Q_6b, is asked to unfold the reason(s) for their choices for Q_7a.

Q_7b: Why do you think that the benefits/costs prevail(s)?

The next proposition corresponds to the second part of P12 for the representative of the financial accounting standards setter (refer to the related discussion in section 5.2.3.1.2) relating to the most suitable position of the new IDF model in the context of financial reporting. As discussed in the previous section, this issue emerged from the first part of the empirical research (chapter 3). Interviewees only wish to see
additional intangibles related information integrated into current financial reporting if such information is reliable, i.e. verifiable from their points of view (refer to question 3.1 relating to P7 in chapter 3). One investor suggested providing such information outside current financial reporting as a separate report if such information is not sufficiently reliable. In the literature, only two approaches are discussed: integrating into the current financial reporting framework (refer to section 2.2.1) or disclosing such information outside current financial reporting (section 2.2.2). In addition to these two alternatives, the researcher believes that there is another alternative: the new IDF model could be attached to the financial statements, i.e. associated with current financial reporting in a way that the information in the IDF model can be reconciled with the information provided in the financial statements. This might be particularly an alternative if the new model is considered to be useful and an enhancement to current financial reporting, but the changes to the current elements of financial reporting would be regarded as overwhelming, i.e. too many changes at once. By way of attaching it to the current framework, it should be consistent with it; but at the same time, financial statements users could learn to work with it together and aligned with current financial reporting. The issue arises here as to the most suitable position of the new IDF.

Similar to the discussion in the previous section, the question not only helps us assess the general acceptability of the model from the interviewee’s point of view, but it also helps understand the most suitable position of the new IDF model. Integration into or close association with current financial reporting would also confirm the claim in this thesis that the new IDF enhances current financial reporting.

If interviewees prefer the new IDF model to be fully separated from current financial statements, it could have various meanings:

- full separation could mean that they do not accept the model to the extent necessary to allow it to become commonly accepted in the marketplace;
- it could also mean that they do not see any benefit from the new IDF model to contribute to an improvement process for current financial statements. They may rather prefer to abandon the current statements and to establish a fully separated and independent reporting structure, which might consist of several sub-reports for various subjects such as intangibles.
However, as discussed in previous sections, the main reason for integrating or closely associating the IDF model with current financial statements would be that it has to follow certain rules and that it might increase the reliability of the new IDF model. It is assumed here that the new IDF model should be either integrated or attached, i.e. closely associated with current financial statements as it enhances current financial reporting. Therefore, the following proposition is raised:

**P15: The new model should be either integrated or closely associated with current financial statements, but not be fully separated from them.**

**Q 8: Where should the new model be placed in respect to financial reporting:**

a) **Integrated in the current published financial statements:**

b) **Attached to the current published financial statements with a reconciliation to the financial statements figures and information:**

c) **Supplementary information separated from the current published financial statements (similar to environmental, social and ethical reporting):**

d) **Any other suggestions how to communicate such a Knowledge Valuation and Reporting Model? - Please state.**

As described in previous sections, the objectives for this part of the research are to validate the usefulness of the new IDF model as well as to obtain an understanding from users of the most suitable position of this model in the context of current financial reporting. Both objectives are covered by the proposition and related questions above. However, the purpose of the following final proposition is to serve as a final and overall confirmation of interviewees’ views as expressed in the course of the previous propositions and related questions in this section. It may also prompt further discussion on the specific issues relating to the new IDF model that have not
been discussed before, but which come into the mind of the interviewee just after having discussed the various questions before.

P16: The new model improves current financial statements.

The following questions follow from the discussion above. They are asked to understand interviewees’ overall views of whether the new IDF model has the power to improve, independent of the different sub-criteria, current financial reporting.

Q_9a forces interviewees to take a clear position. Q_9b aims at delving into a deeper understanding of the views of financial statements users in respect to this new model. Q_9b may also be useful to unfold issues that have not yet been discussed, as explained above.

Q _9a: Overall, do you think that the proposed Model KnowVRM would improve current financial statements?

Q _9b: Why do you think that the proposed model improves financial statements?

For all interviews, the criteria for successful interviewing as indicated in section 3.2.4 are taken into account.

5.2.3.2 Sample selection and entering the field

For the accounting standards board, the IASB, specifically Mrs. Hilary Eastman from the IASB, was contacted and asked for an interview. She is the senior technical
manager at the IASB\textsuperscript{108} and the IASB contact for the intangible assets improvement project that was stopped and deferred in December 2007 due to the reallocation of IASB resources caused by the financial crisis. She referred the author to Mr. Robert Keys (R.K.). R.K. is technical director at the AASB and one of four members of the IASB intangible project team\textsuperscript{109}. The project at the IASB is deferred and currently inactive. However, R.K. is leading the intangibles project with a global group of national standards setters\textsuperscript{110}. He has also authored the latest publication about intangible assets from a financial accounting standard setter supported by these national standards setters (AASB, 2008). The publication is a discussion paper with the principal authors R.K. and Dean Ardern (AASB, 2008)\textsuperscript{111}. R.K. is deemed to be a person who can provide more than only a technical view on the newly developed IDF model. He also has a good understanding of what might be acceptable for an accounting standards board, particular for the AASB and IASB, to successfully pass the process through the different review stages in order to become a new financial accounting standard. The model was discussed with R.K. on 15 January 2009, i.e. briefly after his discussion paper on intangible assets was released. The interview lasted about 1 hour. The IASB as well as R.K. asked to receive the final thesis with the respective results.

For the group of financial statements users and parties concerned, M&A consultants, financial statements auditors (Auditors) as proxies for financial statements users and six IFMs as investors across different industries (biotech and other high-tech companies, chemical industry, automotive, etc.) and countries (the UK, Germany,

\textsuperscript{108} She joined the technical staff of the IASB in June 2006 and she currently serves as a senior technical manager with responsibility for the Fair Value Measurement project at the IASB.

\textsuperscript{109} The project team consisted of Hilary Eastman (IASB; heastman@iasb.org.uk), Robert Keys (AASB; rkeys@aasb.com.au), Dean Ardern (AASB; dardern@aasb.com.au) and Siva Sivanantham (AASB; ssivanantham@aasb.com.au)

\textsuperscript{110} This is the former name of the International Forum of Accounting Standards Setters, which is a global group of representatives of national accounting standards setters and related organisations whose main role is to assist the IASB, primarily through research and commenting on project priorities.

\textsuperscript{111} Following the release of the discussion paper in Oct. 2008 (Discussion Paper, AASB 138 DP), 15 comments papers were received in 2009 from, inter alia, the UK Accounting Standards Board, the Association of Chartered Certified Accountants and KPMG. The work is still pending (last visit of respective website http://www.aasb.gov.au/Work-In-Progress/Pending.aspx on 13 Dec. 2016.)
Belgium, Luxembourg, Switzerland, Spain, Canada and the US) were chosen randomly to validate the general acceptability of the new model.

IFMs were selected for the same reason as described in section 3.2.4. Except for one, they were different to the IFMs selected in chapter 3, as it was difficult or impossible to get access to them again. They had moved from the previous position and disappeared, just disappeared or they were not interested in a follow-up interview for various reasons such as they have become responsible for other investment strategies or responsible for different tasks.

Furthermore, it was difficult to find more IFMs who were interested in an interview about this new IDF model. Therefore, after several rejections from IFMs for an interview, M&A consultants, particularly from accounting firms, were selected as proxies for investors, mainly institutional investors. They were used to analyse the financial statements to conclude on the financial healthiness as well as on the future financial development and profitability of a firm. They played the role of financial specialists advising either the sell or buy side in acquisitions. All consultants interviewed have at least professional experience on the buy-side of the acquisitions of non-financial entities. They provide key financial accounting analysis that influences the decision-making process of investors advised by them. If they believe the new IDF model to be useful, it could be regarded as useful for investment decisions and more particularly in the evaluation of a company’s current financial situation and its possible future financial development.

Auditors were selected for the same reason as described in section 3.2.4. The main source to identify them were private channels and the author’s own knowledge as well as fund investor fact sheets and annual fund reports issued by IFMs investing mainly in the equity shares of non-financial entities, even though investments in financial entities were also acceptable in addition to other equity investments in non-financial entities.

In particular, M&A consultants were identified in two different ways. One way was through the personal network of the researcher, particularly within KPMG. 8 M&A consultants on Partner and Director level could be identified and contacted in this way. The other way was through the country internet websites of larger consulting
firms such as PwC, KPMG, Ernst & Young and Deloitte. The persons in charge of the transaction services in a respective country were contacted. 16 M&A researchers were identified and contacted from countries such as Germany, Spain, Canada, Switzerland, Italy, Luxembourg, Belgium, Netherlands, France, UK, Australia and US. Identifying and contacting of M&A consultants was a relatively straightforward process. The response rate from the personal network was almost 100%; 7 from the 8 identified persons have agreed on an interview. However, it was different for the other M&A consultants that did not belong to the network of the researcher. Even though it was straightforward to identify and contact relevant persons, the response rate to participate in an interview was significantly lower compared with the response rate of the group related to the researcher’s personal network. From the 16 M&A consultants contacted, only 5 from UK, Germany, Belgium, Canada were finally willing to participate in an interview. Overall, 12 M&A consultants accepted the interview query.

Auditors were also identified in two different ways: the researcher’s personal network and annual reports from companies with publicly available financial reports. 6 auditors from the personal network were identified and contacted. They were auditors of stock exchange listed non-financial companies included in the indices MDax, TechDax, NASDAQ-100 in Germany and US. Finally, 5 of them agreed on an interview: 2 from Germany (auditors in charge of companies from the MDax, one of them Canadian Chartered Accountant) 2 from US (auditors in charge of companies from the NASDAQ-100) and 1 from UK (auditors in charge of companies from the TechDax). The other auditors are identified through the annual reports of exchange traded non-financial companies in Germany, UK and US that are included in the indices of FTSE techMARK All-Share©, FTSE 100©, MDAX©, TechDax© and NASDAQ-100©. From each of these indices, 4-6 companies are randomly picked out of each index. Those companies from each of the index had at least different first letters in the company name. Otherwise, there were no further particular selection criteria set and procedures performed in this respect. The annual reports of those companies were used then to identify the names of auditors and their audit firms. In the US, the signing auditors do not provide their personal names. Only the names of the audit firms are shown. Hence, Identification of those auditors were made as follows: the names of the audit firms were stated with city and state. The
respective offices are then contacted by email with reference to the company name for that the auditor was looked for. In all other cases, the audit firms were contacted by email with reference to the name of the auditor who signed the financial statements of the selected companies. Often, the email addresses of these auditors could be found through “google”-search. If not, the main addresses of the audit firms are used with reference to the company and the auditor name with whom the interview was planned. Overall, 29 auditors were identified and contacted in this way. Finally, 5 of them were willing to participate in an interview: one of them is based in Germany and responsible for a company listed in the MDax, another one from the US responsible for a company listed in the NASDAQ-100 and three auditors from UK responsible for audit clients listed in the two FTSE indices. Overall, 10 auditors accepted to be interviewed.

IFMs were also selected in two different ways: based on the list of investment funds registered and available on the internet website of the Luxembourg financial supervisory authority CSSF and based on the list of members of the European Fund and Asset Management Association (EFAMA). The list of investment funds from the Luxembourg financial supervisory authority can be found at http://www.cssf.lu/en/investment-funds/. It is the official list of undertakings for collective investment in transferable securities (UCITS) authorized in Luxembourg pursuant to the Luxembourg law of 20 December 2002. The list consists of several thousands of investment funds. The list were searched through for terms “technology”, “equity”, “growth”, “tech” to find investment funds which consisted of at least equity positions in non-financial companies. In total, 29 investment funds were found (2 “technology”; 16 “equity”; 7 ”growth”; 4 “tech”). Two funds were twice in this group of 29 funds which are SEB CONCEPT BIOTECHNOLOGY and JANUS GLOBAL TECHNOLOGY FUND. Hence, 27 different investment funds were taken into account. Those were:

- “technology” and “tech” (2)
  - SEB CONCEPT BIOTECHNOLOGY
  - JANUS GLOBAL TECHNOLOGY FUND
• “equity” (16)
  o ABARIS CONSERVATIVE EQUITY
  o BERENBERG GLOBAL EQUITY SELECTION PROTECT
  o CREDIT SUISSE EQUITY FUND (LUX),
  o DWS GLOBAL EQUITY FOCUS FUND,
  o GET CAPITAL QUANT GLOBAL EQUITY FONDS,
  o GIS HIGH CONVICTION EQUITY (USD),
  o GLOBAL TREND EQUITY OP
  o ISTANBUL EQUITY FUND
  o LAPLACE EUROPEAN EQUITY
  o LBBW EQUITY SELECT
  o SEB EUROPEAN EQUITY SMALL CAPS
  o SUMITOMO MITSUI TRUST EQUITY FUND
  o SWISSCANTO (LU) EQUITY FUND
  o TN US-EQUITY PORTFOLIO
  o UBS (LUX) EQUITY FUND
  o W&P EUROPEAN EQUITY

• “growth” (7)
  o GLOBAL FOCUS GROWTH
  o DIVERSIFIED GROWTH COMPANY, EN ABREGE D.G.C.
  o EFFICIENCY GROWTH FUND
  o ROBECO CAPITAL GROWTH FUNDS
  o W.P. STEWART QUALITY GROWTH FUNDS
  o AXA FRAMLINGTON US SELECT GROWTH FUND
  o GENERATIONS GLOBAL GROWTH

• “tech” only (2)
  o DEKALUX-BIOTECH
Based on these references, the fund prospectus and annual reports were search for using “google” search. Within the fund prospectus, the respective investment fund manager was stated. In those few cases where the IFM was not stated in the prospectus, the annual report was used to identify the IFM. The prospectus also included the name of the company where the IFM was employed. The company internet website was found through “google” search again. The query was sent through the respective central contact forms. For some companies of the IFMs, central email addresses are provided which were used to contact the IFMs to ask for an interview.

The other way of identifying potential interviewees were based on the list of members of the European Fund and Asset Management Association (EFAMA). EFAMA is the representative association of the European Investment Management Industry with 27 member associations (e.g. Luxembourg ALFI) and 60 corporate members. Corporate members can be found under http://www.efama.org/about/SitePages/Corporate_Members.aspx. 23 corporate members were selected as those belong to the largest asset managers, i.e. those managing a large number of different investment funds, have international presence and distribute Investment funds to retail clients (retail investment funds were tried to find as for those investment fund information is generally publicly available). The list of selected corporate members from EFAMA consisted of the following companies: Allianz Global Investors, Axa Investment Managers, Banque Privée Edmond de Rothschild S.A. (Genève), Blackrock, BNY Mellon, Commerz Funds Solutions S.A., Credit Suisse AG, DEKABank Deutsche Girozentrale, Dexia Asset Management, DWS Investment GmbH, Fidelity International, Franklin Templeton Investments, Goldman Sachs Asset Management International, HSBC Global Asset Management, ING Investment Management, Investec Asset Management, JP Morgan Asset Management, Nordea Investment Funds, Pioneer Investments, Royal London Asset Management, Schroders, UBS Global Asset Management, Union Asset Management Holding AG. Based on this list, the websites of these corporate members were visited to identify equity trading retail investment funds. The complete process up to the identification of the fund manager (sometimes also called
portfolio manager) is illustrated in the following based on the company JP Morgan Asset Management:

First, the website of JP Morgan Asset Management was visited through the link provided by the EFAMA’s website (https://www.jpmorganfunds.com/cm/Satellite?UserFriendlyURL=home&page=homepage). Afterwards, the “product” folder was selected on the homepage and then “mutual funds”. Then, all equity funds (US and international) were selected (see https://www.jpmorganfunds.com/cm/Satellite?UserFriendlyURL=mutualfunds&page=homepage). Two US (dynamic growth fund and equity focus fund) and two international (international equity fund and international opportunities fund) funds were selected based on the researchers' own judgment considering that an equity fund should be selected as those trade equity shares (there were in total more than 50 JP Morgan funds available for the selection). The prospectuses of all funds which portfolio managers were identified for, were downloaded. The company was contacted and asked to forward the researcher’s query for an interview to the respective fund manager. In the case of JP Morgan, the query was sent through the central contact form to be found under https://www.jpmorganfunds.com/cm/Satellite?UserFriendlyURL=contact_us&page=homepage. For some other companies, central email addresses were provided which were used to contact the companies to ask for an interview with the identified portfolio managers.

In total, 23 companies were contacted to ask for interviews with in total 53 IFMs (in general 2 portfolio managers for each company and, on a case by case basis where a segregation of equity fund range was given similar to JP Morgan, more than 2 were selected based on the researcher’s judgment to find funds with equity price exposures). Based on these two approaches, 79 investment fund managers were contacted and asked for an interview. However, only 6 responded positively and were open for an interview.

The reason for this selection approach was to identify a broad range of financial statements users who are, inter alia, exposed to companies that should be most
concerned by intangibles related information and who are knowledgeable in financial accounting matters. This approach also allowed to identify different groups of financial statements users with different cultural and financial accounting background. The purpose of this approach was also to obtain a broad range of different perspectives from different financial statements users within this sample of 29 interviewees.

In summary, 29 interviews (6 IFMs, 12 M&A specialists, 10 auditors and one accounting standards setter) were conducted, which is deemed as sufficient and reasonable to derive robust results. All interviews were set up as telephone interviewees and lasted about 1 hour (ranging from a minimum of 37.35 minutes up to a maximum of 63:35 minutes with R.K.). All interviews were taped and transcribed (refer to section 3.4 for a detailed discussion of this approach). Interviewees received the questionnaire (including the model description) before the semi-structured interviews took place. The interview with R.K. took place on 15 January 2009, while interviews with the other participants took place in the period from 9 March 2010 to 2 June 2010.

5.2.3.3 Methods of data analysis

5.2.3.3.1 Data analysis in qualitative research studies

Data analysis in qualitative research studies was discussed in section 3.2.4.3.1.

It was explained in that section that the data analysis for the first case study is based on thematical analysis in the course of inductive-oriented research.

As the objective of this part of the research is to validate the newly developed IDF model, a deductive-oriented research approach is applied even though qualitative research strategies predominately emphasise an inductive approach, as emphasis is put on the generation rather than validating of theory (e.g. Bryman, 2001). In this respect, data analysis has to be aligned with this deductive approach. Generally, procedures used in qualitative research studies for data collection and analysis are applied to generate new theory. They cannot be applied in their most common ways as the objective for collecting and coding data is different at this stage of the
research. Furthermore, the key themes were already identified in the course of the model development process. They could also be regarded as ‘naturally enforced’ by the principles laid down in various financial accounting standards and respective frameworks such as those issued by the IASB or the AASB. ‘Naturally enforced’ means in this context that current financial accounting principles have to be complied with if the new model is to be integrated or somehow associated with the current financial accounting framework. The latter and some of those main principles were essentially validated.

Therefore, and as this part of the research continues to follow a constructivist approach as regards coding, i.e. a more generic analysis and coding approach is applied to meet the particular needs of this research part (Gomm, 2008; Creshwell, 2007). Under this approach, the identified themes, indicated by the propositions described and discussed in section 5.2.3.1, and their related questions and responses given by interviewees were analysed. The outcome is supported by representative examples of interview responses. Based on the outcome, the propositions are proved or refuted.

5.2.3.3.2 Coding procedure

Even though no specific coding theory is followed, the coding procedure applied here is similar to that described in section 3.2.4.3.2, i.e. open coding principles are applied. Interviews were carried out with every candidate described above. They were tape-recorded and transcribed. In the first stage, no translation was made for interviews in German. All interviews were copied to Microsoft Excel. The questions were listed along the rows and responses of interview candidates were in the columns. The result was a two-dimensional matrix that includes all responses next to each other for each question. The aim was to facilitate the comparison of responses for each question even though the questions for R.K. were different to those posed to financial statements users. The structure of the Excel sheet was similar to that shown in section 3.2.4.3.2.
The responses of interviewees to each question were compared and analysed. The responses given by R.K. were analysed independently in a first step, but linked to those of other interviewees if relevant. All responses were then linked to the related themes as described above. For example, the theme of whether the new IDF model should be integrated into current financial statements or otherwise was analysed together.

5.2.3.3 Data management

The data management procedures are the same as those described in section 3.2.4.3.3.

5.3 Results and discussions of interviews

In the following sections, the results of the responses of interviewees are presented and discussed in respect to the propositions raised. Overall, the different propositions are used, as described in previous sections, to achieve the research objectives stated in section 5.2 and to validate:

- whether the newly developed IDF model, as described in chapter 4, is acceptable;
- and
- the most suitable position for the new IDF model in the context of current financial reporting.

5.3.1 The usefulness and acceptability of the new IDF model

The usefulness and general acceptability of the new IDF model is validated by

- P11 addressed to R.K. as the representative of a financial accounting standard setter,
• the first part of P12 addressed to R.K. as the representative of a financial accounting standard setter and
• P13 addressed to the group of financial statement users.

The results are shown and discussed in sections 5.3.1.1 and 5.3.1.2.

5.3.1.1 Usefulness and acceptability for financial statements users

As discussed in section 5.2.3.1.3, Q_2a to Q_5b refer to P13. The questions were posed to obtain a detailed understanding of financial statements users’ views relating to the usefulness and acceptability of the new IDF model. Q_2a to Q_3b refer directly to the objective of financial reporting, i.e. to the concept of usefulness. Q_4a to Q_5b refer to the qualitative characteristics establishing useful financial information according to a financial accounting standards setter such as the IASB (refer to section 5.2.3.1.3). The following table summarises the responses to Q_2a, Q_3a, Q_4a and Q_5a:
<table>
<thead>
<tr>
<th>Questions relating to … of the new model</th>
<th>Yes</th>
<th>No</th>
<th>Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Decision-usefulness (Q_2a)</strong></td>
<td>21</td>
<td>7</td>
<td>--</td>
</tr>
<tr>
<td>M&amp;A Consultants</td>
<td>10</td>
<td>2</td>
<td>--</td>
</tr>
<tr>
<td>Auditors</td>
<td>7</td>
<td>3</td>
<td>--</td>
</tr>
<tr>
<td>IFMs</td>
<td>4</td>
<td>2</td>
<td>--</td>
</tr>
<tr>
<td><strong>Providing Useful Information (Q_3a)</strong></td>
<td>21</td>
<td>7</td>
<td>--</td>
</tr>
<tr>
<td>M&amp;A Consultants</td>
<td>10</td>
<td>2</td>
<td>--</td>
</tr>
<tr>
<td>Auditors</td>
<td>7</td>
<td>3</td>
<td>--</td>
</tr>
<tr>
<td>IFMs</td>
<td>4</td>
<td>2</td>
<td>--</td>
</tr>
<tr>
<td><strong>Relevance (Q_4a)</strong></td>
<td>23</td>
<td>5</td>
<td>--</td>
</tr>
<tr>
<td>M&amp;A Consultants</td>
<td>11</td>
<td>1</td>
<td>--</td>
</tr>
<tr>
<td>Auditors</td>
<td>8</td>
<td>2</td>
<td>--</td>
</tr>
<tr>
<td>IFMs</td>
<td>4</td>
<td>2</td>
<td>--</td>
</tr>
<tr>
<td><strong>Faithful Representation (Q_5a)</strong></td>
<td>17</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>M&amp;A Consultants</td>
<td>8</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Auditors</td>
<td>5</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>IFMs</td>
<td>4</td>
<td>2</td>
<td>--</td>
</tr>
</tbody>
</table>

Table 5.1: Summary of results from Q_2a to Q_5a addressed to financial statements users

It should be noted that some candidates were not sure whether to respond to a question by “yes” or “no”, but after asking them to finally decide, many, albeit not
all, made a final decision. All those who had difficulties giving a clear response finally decided for a “no”. They explained that this model is an interesting and perhaps useful approach, but due to the perceived uncertainty and extensive management judgment, it will be hard to make it reliable and hence the usefulness is limited and would not justify a “yes”.

The latter is particularly evident for auditors. Auditors represent about half of the interviewees who said “no” to these questions. Moreover, it is even more interesting to note that three auditors negated the usefulness of the new IDF model, even though four auditors do not believe that it provides reliable financial information. This is an inconsistent view and is particularly surprising from a group of professional accountants. However, a reason for this inconsistency in appearance may be that few auditors were not sure at all and struggled with a clear “yes” and “no”, but they were finally forced to decide and that decision might be one just for the sake of a final result without a final thorough deliberation.

The following auditor is an example of those who have negated the decision-usefulness (Q_2a) as well as the faithful representation/reliability (Q_5a):

**Extract 5.1 (Q_2b; A6)**

**Question Q_2b):**  “Why do you think that the model is decision-useful?”

**Auditor (6):**  “The model could be useful if the underlying information is reliable. I have personally some concerns about it as many elements have to be determined very much based on management judgment. That opens room for manipulation and arbitrary behaviour. So, if I have to say yes or no I would say no as there are many uncertainties in this model which will be difficult to make reliable. That means it will limit the usefulness as well.”

However, there was broad consensus among constituencies that the new IDF model is decision-useful, in particular for assessing the cash flow prospects and stewardship
of a company (OB3 and OB4 of IASB (2010)). This was shown by the following statements by one of the investors and of the M&A consultants:

**Extract 5.2 (Q_2b; I1) and Extract 5.3 (Q_2b; M&A4)**

**Question Q_2b:** “Why do you think that the model is decision-useful?”

**Investor (1):** “Well - there are many components that are useful, which provide useful insights. Insights about the intangible elements not included yet in the financial reports will help understanding the sources from which revenues are generated. It gives a lot of bits and pieces - and the understanding of the management how they relate to each other which will certainly help analyse a company’s development. The usefulness may also depend on the different industries, but for many industries and companies it has certainly the ability to make a difference - I think it is very useful.”

**M&A Consultant (4):** “For me, the model is useful as it provides a lot of useful information about the expected cash flows of a company, particularly from intangible assets. In acquisition processes, you need a lot of information relating to a company’s financial sustainability and sustainability is assessed based on future cash flow streams and where they come from. Knowing more details of the resources from which future cash flows are generated is therefore generally very useful.”

These statements are also consistent with the requirements and current practice described by financial statements users in the first part of this research (refer to sections 3.3.4 and 3.3.5).

The broad consensus about this decision-usefulness supports the key claim of the usefulness of this new IDF model. It particular, it meets the objective of providing useful financial information for assessing the cash flow prospects and stewardship of
a company as laid down by OB3 and OB4 of IASB (2010) (refer also to section 2.2.1.1). The two interviewees have explicitly highlighted, similar to other interviewees who also confirmed the usefulness, that the new IDF model provides information to better assess the future cash flows of a company. The latter also means that the new IDF model provides information to help external parties estimate the value of the reporting entity (OB7 of IASB (2010); refer also to section 2.2.1.1).

The results are also consistent with the literature as discussed in section 2.3.4; they generally support the claims in the literature. The literature argues that constituencies would like to see more information about a company’s intangibles (Ousama et al., 2011; Vafaei et al., 2011; Whitwell et al., 2007; Flöstrand, 2006; Holland, 2006; Lev et al., 2004). Moreover, they argue in favour of revised financial accounting standards to allow financial statements preparers to include more information and values concerning the company’s intangibles base (Alwert et al., 2009; Lev, 2008; Milost, 2007; Andriessen, 2004b; García-Ayuso, 2003; Lev, 2001). Even though financial accounting standards setters seem to be still reluctant to change current rules, as they believe that more information about intangibles is either not reliable, not comparable or not relevant (Abeysekera, 2008b; Arenas and Lavanderos, 2008; Skinner, 2008a; Stark, 2008; FASB, 2001), the new IDF model proposes an acceptable approach to change current financial reporting rules. Prior to the new IDF model, the reluctance of financial accounting standards setters was understandable, as there were no commonly accepted intangibles related models that had been empirically validated and deemed as overall useful, including relevant and reliable, for financial statements users (refer to sections 2.2.2 and 3.3.10). Therefore, the new IDF model also bridges the gap between the different views and expectations of financial statements users and financial accounting standards setters.

As discussed in previous sections, Q_3a and Q_3b were posed to further support the claim of the decision-usefulness of the new IDF model. Interviewees were asked to give specific feedback about whether the new IDF model provides information about an entity’s economic resources, claims against the company or specific events that change a company’s economic resources and claims (OB12 of IASB (2010)). Overall, interviewees confirmed the usefulness of the new IDF model in this respect. For example, Investor (5) confirmed it as follows:
**Extract 5.4 (Q_3b; 15)**

**Question Q_3b:** “Why do you think that the model provides such useful information, i.e. information about an entity’s economic resources, claims on those resources and changes in resources and claims as well as changes in resources and claims resulting from financial performance?”

**Investor (5):** “The model is useful because it provides detailed information about the sources of value, especially as regards intangibles value. The new balance sheet and notes give more details about individual assets and about how they relate to a company’s value. […] the comparison from one year to the other is definitively helpful to understand why changes have occurred and what the reasons for those changes are.”

The first part of his statement supports the view from the literature again, i.e. that constituencies do want more information about a company’s intangibles value (Ousama et al., 2011; Vafaei et al., 2011; Whitwell et al., 2007; Flöstrand, 2006; Holland, 2006; Lev et al., 2004).

However, the second part relating to comparable information over time does not seem to be discussed in the literature. None of the proposed intangibles related models has explicitly considered and validated the relevance of comparable intangibles related information. Only the Conceptual Framework of the IASB (IASB, 2010) requires comparability as an enhancing qualitative characteristic of useful financial information (refer to section 2.2.1.2; QC21 of IASB (2010)). Even though not all the qualitative characteristics suggested by the IASB are validated here, the finding above is consistent with previous empirical research, as discussed in section 3.3.8. In section 3.3.8, comparability is an important feature for financial statements users and, therefore, it was also considered in the new IDF model.

As discussed in previous sections, Q_4b and Q_5b relate to the two fundamental characteristics of useful financial information, relevance and reliability. These were
discussed with interviewees to obtain more insights into the reasons for the usefulness of the model. As shown in Table 5.1, financial statements users generally confirm the relevance and reliability of the new IDF model. The following statements from an investor and an M&A consultant illustrate the general consensus about the relevance of the new IDF model:

### Extract 5.5 (Q_4b; M&A11) and Extract 5.6 (Q_4b; I6)

**Question Q_4b:** “Why do you think is the proposed model relevant, i.e. improve predictive and confirmatory value of financial information?”

**M&A Consultant (11):** “The relevance comes from the details of the information. The information is very helpful in evaluating risk and the chances of the company’s future development. The information helps assess the value of a company and where risks in the future development might arise.”

**Investor (6):** “It simply provides more detailed information and management discussion and analysis around intangibles sources, which are parts of the revenue generating cycle.”

One of the investors for whom the new IDF model is not relevant referred to the phenomenon discussed in sections 3.3.4 and 2.2.1.4: he already receives similar type of information. This does not only explain why he does not find the new IDF model relevant, but it also explains why he does not find the IDF useful at all (he stated a “no” for Q_2a to Q_5a). On the other hand, his statement could also be interpreted as supportive of the new IDF model as he said that he already receives similar information even though in a different format:
Investor (4): “Because I already receive much of that information from companies. As I said, it is not in the same format and some elements may be slightly different, but generally I do not need it again.”

However, care should be taken not to over-interpret his statement. It is unclear what he receives in detail, even though he probably receives a lot of value relevant information for assessing the value of the company in addition to the financial statements (refer to section 2.2.1.1 for value relevant information relating to the financial statements). It is very likely that he requests similar information relating to intangibles as the interviewed investors in the first empirical research part (refer to section 3.3.4) which is considered in the new IDF model (refer to section 3.4). However, the latter is not finally confirmed here. Moreover, it would be unlikely that he receives similar information in a similar structure.

Overall, the concerns of financial accounting standards setters relating to the relevance of intangibles related information described above are not supported by constituencies. Moreover, they believe that the new IDF mode is highly relevant.

By way of moving to Q_5b, it is interesting to note that one auditor explained in length why he believed that the new IDF model could be relevant. However, it became obvious in the course of the interview that he was struggling with this new idea of intangibles disclosure. In this context, he referred to an element of the new IDF model, namely the detailed explanation of valuation:
Extract 5.8 (Q_4b; A1)

Question Q_4b: “Why do you think is the proposed model relevant, i.e. improve predictive and confirmatory value of financial information?”

Auditor (1): “[…] this is certainly a very exciting question because there is another component – to explain the valuation. And if I receive a reasonable explanation, I would have higher reliance and trust in such information, but in the financial information overall, because someone cannot just generally refer to business development; this person must now provide more details including certain ‘grey areas’.

In the course of responding to the question relating to the relevance of the new IDF model, he also associated relevance with reliability and that reliability can be achieved or enhanced if the underlying information, particularly on fair values, is explained in detail. An interesting conclusion can be drawn from his statement: the fundamental characteristics relevance and reliability are more closely associated with each other than the current Conceptual Framework of the IASB (2010) suggests. In IASB (2010), reliability and relevance tend to be two different and independent concepts (refer to section 2.2.1.1). The Conceptual Framework of the IASB (2010) only indicates a relationship with decision-useful information, as for financial information to be useful, it needs to be reliable and relevant (QC17 of IASB (2010)). Another conclusion from his statement can be drawn for the reliability of the new IDF model.

He was also struggling with an answer relating to reliability. Finally, he decided that the IDF is not as reliable as it would need to be. Even though he finally believed that the model is not sufficiently reliable, as much information from it seems to be very judgmental, he agreed that the extensive explanations enhance reliability through a higher degree of verifiability.
This finding confirms the conclusion reached in sections 3.3.7 and 3.3.8. Financial statements users associate verifiability with reliability, compared with the IASB (2010) where verifiability is an enhancing qualitative characteristic of useful financial information, but it does not establish the usefulness or reliability of financial information (refer to section 2.2.1.1 for a detailed discussion on the IASB’s conceptual framework relating to useful financial information). It also confirms Whittington’s (2008) alternative view in addition to the fair value view - i.e. a stronger emphasis on stewardship and equally ranked decision-usefulness in the IASB’s conceptual framework at best (refer to section 3.3.7). The latter - i.e. a more balanced approach—has just recently been taken into consideration by the IASB in the course of the review and improvement of the current conceptual framework (refer to section 2.2.1.1; IASB, 2015). It is worth noting that the results from the previous interviews (refer to section 3.3.7), which took place in 2003/2004, have already indicated the need for a re-deliberation on the conceptual framework related to the debate of decision-usefulness vs. stewardship (refer also to the discussion in 2.2.1.1 and 3.7).

The majority of interviewees regard the new IDF model as reliable. The following two statements from an investor and an M&A consultant illustrate this view:

**Extract 5.9 (Q_5b; I1) and Extract 5.10 (Q_5b; M&A7)**

**Question Q_5b):** “Why do you think it represents faithfully financial reporting information?”

**Investor (I):** “Let me think about - the information given in the report is justified by various different discussions and other analysis. Management has to explain in all details and in length the different disclosures made. I can now see and compare the various statements with my knowledge and with other parts of the information available from the company. – Yes, it is reliable for me. Perhaps someone external could also look at it; it may help increase reliability, but I do not see a significant benefit by doing that.”
M&A Consultant (7): “Why is it so? [remark by author: he refers to his previous answer “yes”] … many figures are verifiable and many explanations are required. It would be very difficult to cheat systematically as a lot of information relates to each other. But I am also a bit concerned about the scope of judgment that is necessary for proving all information. I also have concerns about other accounting standards that require significant judgment - if you think about the fair values and the provisions in balance sheets.”

Constituencies do believe that the new IDF model provides reliable information about a company’s intangibles compared with the views of financial accounting standards setters so far (Abeysekera, 2008b; Arenas and Lavanderos, 2008; Skinner, 2008a; Stark, 2008; FASB, 2001). This finding is also consistent with similar claims in the literature, even though they are mostly made without empirical evidence (refer to section 2.3.4 and above).

These different views between the literature and financial accounting standards setters are for mainly one reason: The intangibles related models proposed in the literature and described in section 2.2.2 are de facto not useful, i.e. they are either not relevant or reliable. Their respective authors in the literature claim that the models are relevant. Unfortunately, their claim is not widely accepted and supported by sound empirical evidence. Moreover, their claim is also not supported by the empirical findings from the first part of this research with constituencies, as discussed in chapter 3. Furthermore, the issue of reliability is rather disregarded by the authors of these intangibles related models: the models lack validity for different reasons: they are too broad or general, in most cases developed by practitioners rather than by academics and therefore often not theoretically well developed, while the objectives of those models also remain ambiguous (Dumay, 2009; Choong, 2008; Andriessen, 2004a; Kaufmann et al., 2004). Even more, no specific model is regarded as suitable for audited financial statements, because none of these models has been developed with the purpose of enhancing current financial reporting by, for
example, integrating them into the current accounting framework and related rules (Samudhram et al., 2008; FASB, 2001).

The new IDF model overcomes these issues as it is not only derived from the needs of constituencies (chapter 3), but it is also revalidated with them. The model is developed along with the main principles of model building and conceptual accounting requirements such as relevance and reliability (chapter 4) to make it useful and acceptable for constituencies and financial accounting standards setters, i.e. to bridge the gap between the two views described above.

Therefore, the reluctance of financial accounting standards setters to change current rules due to the different proposed intangibles related models in the literature until this day seems to be reasonable and understandable from the discussion above. However, it is also evident that the new IDF model has better and compelling arguments to overcome the gap between the two views. This should convince accountancy bodies to change current reporting requirements.

In summary, there is broad consensus about the usefulness of the new IDF model. This consensus is also supported at the level of fundamental qualitative characteristics, i.e. relevance and reliability, as described by the IASB’s CFFR.

Interestingly, two IFMs do not find the new IDF model as useful because, as they stated, they already receive similar intangibles related information or they request such information from a company on a bilateral basis. One of them was investor (4), who was already cited relating to Q_4b. The other interviewee was investor (2):

<table>
<thead>
<tr>
<th>Extract 5.11 (Q_2b; I2)</th>
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<tr>
<td><strong>Question Q_2b):</strong></td>
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<tr>
<td><strong>Investor (2):</strong></td>
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</table>
The responses from both interviewees do not disprove the usefulness of the new IDF model even though they stated “no” to the usefulness of the new model. They already receive similar information, which confirms the general usefulness of the new IDF model. It may not be useful for these two individual investors, but Investor (2) also believes that such information might be useful for others. This phenomenon is already discussed in section 3.3.4 and confirms the findings from Holland (2006) again. Thus, the result of the “no” on the paper is not a general rejection of the new IDF model. It can be even more interpreted as a confirmation of the usefulness of this new IDF model in these specific cases. Therefore, the broad consensus becomes even broader after the interpretation of these findings.

The only group that seems to struggle with the usefulness of the new IDF model is the auditors, even though the majority of this group still find the new IDF model to be useful. As already explained in previous sections, auditors have a specific view of this topic. Their responsibility is to provide an opinion about whether the financial information provided by a company is free of material mistakes. They have no personal interest in useful information, but understand the general acceptability of financial information, as they act as intermediaries assuring a certain quality of financial information. Therefore, their personal reluctance is not surprising, rather natural and to be expected.

This finding reconfirms the observation made in the first part of this research (chapter 3) and reflects auditors’ concerns that they may have to audit this information, which indeed contains many judgmental elements rather than “hard facts”. Even though their reluctance could be expected, their in-depth feedback is valuable for the assessing the new IDF model (see e.g. Auditor (1) in relation to Q_4b cited above).

Finally, users seem particularly to relate usefulness to “detailed information about the source of value” (refer to Extract 5.4) - i.e. insights into and details about the hidden intangible values of a company. As already stated above, both in this section and in sections 3.3.7 and 3.3.8, users have particularly emphasized the need for verifiable information to become reliable and hence useful for them. However, users
also stated that the IDF model is relevant because it provides “details of information” (e.g. Extract 5.5). They may take relevance as a prerequisite and rather imply it for usefulness compared to reliability, which they consider more explicitly through verifiability. In other words, users emphasise on the need of verifiable information to become reliable and only such reliable information is relevant for them. Considering verifiability relates to reliability/faithful representation, users stronger emphasise reliability compared to relevance. In this respect, it is interesting to note that the IASB (2010) has deliberated on whether verifiability should be an explicit aspect of reliability, as does the FASB’s Concepts Statement No. 2 (BC3.35 of IASB, 2010). In BC3.36 of IASB (2010), it is stated: “The discussion paper stated that reported financial information should be verifiable to assure users that it is free from material errors and bias and can be depended on to represent what it purports to represent. Therefore, verifiability was considered an aspect of faithful representation.” While the IASB was convinced at that time that verifiability should be an aspect of reliability as included in FASB’s Concepts Statements No. 2 and required by the users interviewed in this research study, they abandoned this approach due to some responses to the discussion paper. The respondents referred to by the IASB claimed that including verifiability as an aspect of reliability could result in excluding information that is not readily verifiable. The IASB finally agreed that verifiability should be an enhancing qualitative characteristic that is very desirable, but not necessarily required. This may indeed raise many questions, one of which is certainly the mismatch between “some respondents” as referred to by the IASB (2010) and the results found in this study. The latter rather confirm the FASB’s approach and the approach initially proposed by the IASB.

Overall, the **claim of the usefulness of the new IDF model**, as initially stipulated (refer to chapter 4), is clearly confirmed by the majority of constituencies interviewed. Based on the above results, the new IDF model should also meet the expectations of accountancy bodies, as validated in the following section.
5.3.1.2 Usefulness and acceptability for a financial accounting standard setter

The usefulness and general acceptability from a financial accounting standard setter view is validated by P11 and a part of P12. P11 addresses the reliability of the new IDF model and the first part of P12 addresses general acceptability. As explained in section 5.2.3.1.2, Q_2 and Q_3 relate to P11 and the relevant part of P12 relates to Q_4. By way of introducing him, he also made a comment on the general fieldwork undertaken by this research:

Extract 5.12 (R.K.)

R.K.: “[…] First of all, congratulations for what you’re doing because it’s an admirable and ambitious task that you’re taking on. And I hear that you are responding to the needs of users, which is pleasing to hear because often we don’t hear a lot from users, and to know that someone is out there actually researching and exploring fully what users are asking for and try to come up with a balanced model to achieve that, I think its and admirable task that you’re taking on, so well done”

His statement confirms the statement of the chairman of the IASB, Sir David Tweedie, (IASB, 2012) and the current weakness in the current accounting standard development process of not systematically involving the main parties including investors and creditors, as described in section 4.2.3. However, his statement also confirms the usefulness of the model development and related empirical research for current accounting research, particularly as a significant contribution to CondNAT, as described in section 3.2.

The interview with R.K. was slightly different compared with the interviews with financial statements users. Here, the questions were de facto only used as prompters that nothing important and relevant for this analysis was forgotten. Otherwise, the interview turned out to be a rather open conversation. R.K. drove much of the conversation and went into the detail of each step of the model. Having said this, Q_2 and Q_3 were answered as follows:
R.K. essentially would require an audit of the new IDF and consistency with current audited financial statements. As discussed in section 5.2.3.1.2, his statement indicates that he does not reject the new IDF model. Moreover, he even requires an enhancement of reliability through an external audit to reduce the risk of manipulation. Finally, his answer also indicates that he accepts the new IDF model in a way that it is acceptable to associate it with current financial reporting. The conversation relating to Q_4 was extensive compared with Q_2 and Q_3. Overall, R.K. confirmed the usefulness and acceptability of this new IDF model.

He commented that his understanding of the new IDF model is that it is developed based on current accounting rules such as IAS 38, whereas if he had to start building a new intangibles accounting model, he would start with IFRS 3 – business combination (refer to 2.2.1.3) as he is critical of the existing requirements under IAS 38:

Extract 5.14 (Q_4)

R.K.: “A comment […] that the approach you were taking seems to be acceptable […] take for granted what the current accounting requirements are. And you would then adding to the existing requirements whereas I would be critical of the existing requirements and I personally would want those existing requirements changed, which would result in the greater recognition and fair-value measurement of a lot more intangible assets than are currently permitted to be recognised.”
He would start with the accounting standard about business combination, which includes intangible assets, whereas the new IDF model is developed based on current reporting requirements for intangibles independent of any business combinations which refers to IAS 38 to start with. This point is a technical issue, as the new IDF model is also consistent with, and could be based on, IFRS 3, as it requires the recognition of all intangible assets recognised under IAS 38. If the new IDF model would be considered to be a basis for the development of a new financial accounting standard for intangibles, IAS 38 could be first replaced by an IFRS 3 model relating to intangibles just without a necessary triggering of business combination and then complemented by the different additional information as proposed by the new IDF model. The latter is preferred by R.K. as a more practical way for the development of a new accounting standard about intangibles (AASB, 2008). In fact, the only reason why R.K. prefers to take IFRS 3, he referred his view to as a “top-down” approach, as a starting point is that it facilitates the process and avoids the risk of not identifying all relevant intangibles compared with the bottom-up approach required by IAS 38 (AASB, 2008). However, the IDF model combines both approaches: identification from a bottom-up approach and later comparison with the top-down approach. Hence, his comment supports the approach selected for the new IDF model. In this respect, he believes that IAS 38 is not useful for intangibles related financial reporting. He would rather prefer to replace IAS 38 with IFRS 3 as a first step:

Extract 5.15 (Q_4)

R.K.:  “And just to clarify, my fundamental view is that IAS 38 is fundamentally flawed and that the principle of IFRS 3 is closer to what appropriate accounting is. Therefore, I personally would prefer to see the principles in IFRS 3 applied irrespective of whether there is a business combination. So, in a sense, I would like to see IAS 38 replaced with the principles from IFRS 3 and have what I call a hypothetical business combination on each balance sheet date. And in that process you would have been identifying, recognising and fair value measuring all your identified intangible assets.”
Interestingly, he used the notion of “hypothetical business combination” to refer to the application of the intangibles identification, recognition and measurement criteria of IFRS 3 independent of a business combination. He believes that the new IDF model is similar to the hypothetical business combination model:

**Extract 5.16 (Q_4)**

**R.K.:** “[…] Again, I found it sort of very similar to this notion of a hypothetical business combination, so that resonated with me and I was agreeing […]”

Even though the new IDF model essentially includes, and is similar to, the hypothetical business combination approach, two main differences enhance the hypothetical business combination approach he refers to. These are:

- step 7 of the new IDF model, which does not exist under the hypothetical business combination approach; and
- the extensive disclosure descriptions.

Step 7 requires the “allocation of the difference between the fair value of the company as a whole and the carrying amount of the total equity on the ‘preliminary modified balance sheet (2)’ to the identified and non-identified knowledge assets as well as to all other tangible assets and liabilities” (refer to section 4.3.3). This allocation should be based on management’s best estimate of the weight of each component and consistent with the valuation of the company made in step 6 of the new IDF model, as described in section 4.3.3.

R.K. felt uncomfortable with this approach at the beginning of the discussion, as he understood it as an arbitrary allocation and not as an allocation based on professional judgment as was clarified in the course of the conversation. With the latter, he was fine. Generally, he accepted this procedure even though he would currently not go beyond what IFRS 3 allows:
Extract 5.17 (Q_4)

R.K.: “[...] I think I’m uncomfortable making an arbitrary allocation just to get rid of the residual. I would prefer to continue to call the residual goodwill, because I think users understand what goodwill is, and that’s the unidentifiable stuff that we’ve got … that’s the difference between the value of the thing as a whole and the value of the individual assets and liabilities that are identifiable. [...] on page 2 of the appendix, where you summarise the model that comprises the following general procedures, you say that this difference that we’re talking about in step 7 is to allocate the remaining difference on a reasonable basis at management’s best estimate. Now I read that as almost being a systematic arbitrary sort of pro rata allocation of a difference across a range of assets and liabilities. What you’ve just described to me is more of a targeted direct justifiable allocation using judgment. It’s more driven from professional judgment rather than an arbitrary allocation, which I believe is fine. [...] Whereas I prefer to say well it’s a residual, we can’t reliably allocate it, we will call it goodwill because we can’t think what else to call it. But some of the themes we think it is comprised of include the following. Again, it’s a unit of account question as to how far you try and better describe the item so as users get useful information.”

It is important to recognise that the new IDF model has goodwill if a residual remains after all reasonable allocations: “overall company structure related to intangible and intangible assets as well as liabilities dependent on the company as a whole” as described under step 7 (refer to section 4.3.3). Hence, the only main difference with the hypothetical business combination approach is the additional step 7, where a further reasonable allocation of the remaining goodwill under current IFRS 3 rules should be undertaken to the extent possible. If it is not possible to provide more detailed information as R.K. refers to it, then there is no difference between these two approaches, as step 7 is essentially not applied in respect to the
allocation. The second main difference is the extensive disclosure description. Even though it is more extensive than IFRS 3 would require, he was fine with it:

**Extract 5.18 (Q_4)**

R.K.: “I didn’t have any problems with any of your disclosure descriptions. They all made sense to me. Obviously, there is always a general feeling that financial reports are getting longer and longer, and it’s harder for users to pick out the relevant pieces of information. But there wasn’t anything in your bit that I thought was excess disclosure.”

In summary, he thinks that “it’s got a lot of good ideas in here”, but it may be hard to convince certain people such as financial analysts who really don’t want this information disclosed because they make money out of the inadequacies in the financial reports currently”. His latter comment is consistent with the findings in sections 3.3.4 and 5.3.1.1 as well as by Holland (2006).

Further, he made a few final technical comments, which are relevant to consider if the new IDF model were to be fully introduced through a new accounting standard:

- It should be made clear that fair value measurement should be consistently applied in accordance with current IFRS 13 rules. For example, if active observable market prices exist, such prices should be used. Cash flow models should only be used if no active market is available.
- The various adjustments depend on the accounting model(s) applied by a financial reporting preparer. For example, if the cost accounting model is applied for tangible (IAS 16) or intangible (IAS 38) assets, the adjustments are different compared with the case if these intangible and tangible assets are measured according to an optional fair value model.

He also addressed a general problem in accounting: the issue of the clear distinction and description of the different assets identified.
Extract 5.19 (Q_4)

R.K.: “It’s a general problem in accounting: you have identified and used descriptives for particular types of assets such as copyright rights, rights intangible assets, customer intangible assets, human capital intangible assets, etcetera. The problem in the implementation that we see is what is the unit of account and how do we circumscribe the asset that we are talking about to ensure that we don’t include value that’s attributable to another kind of asset, to make sure we don’t double-count, and that sort of thing. So it’s probably just an observation that isn’t a problem here for implementation. But it would be good to have clarity around how we do circumscribe one asset so as it’s clearly distinguished from another asset. And particularly when we are talking about intangible assets, it can be difficult to circumscribe the thing we are talking about, because it doesn’t have a physical form.

[…] Yes, that also comes down to the definitional distinction between tangible and intangible assets. Because an issue you otherwise had is with land. Land is a physical asset, it’s a tangible asset, but there’s a lot of intangible aspects to it, such as its location or the view you get from a block of land: if you’re on top of a hill and you get a panoramic view versus being in a valley and don’t get any view. So again, that’s the sorts of definitional issues, and how to circumscribe an asset, that are going to always be a problem in accounting. But I don’t think they’re insurmountable in practice; judgment needs to be applied.”

He made this comment like an unimportant side note, but what he was describing is exactly the problem described in sections 2.3.2 and 2.3.4 (refer also to Appendix VI). As indicated in section 2.3.2, something what is imprecisely defined cannot be measured accurately. Different to tangibles, which can first be identified and then defined and described, intangibles are somehow identified hand-in-hand with the
description of them, as they do not exist physically and they cannot be imagined without a prop, which can be either physical objects or descriptions.

His view of a practical approach in this respect is also described in section 2.3.4 and supported by the empirical research discussed in section 3.3.4. Therefore, this issue has to be further researched in the future, but in the meanwhile, a more pragmatic approach is also accepted, in addition to his view, by financial statements users.

As a final conclusion, the new IDF model is not only useful for and accepted by financial statements users (refer to section 5.3.1.1), it is also generally accepted by R.K. as a representative of the AASB and currently the driver for intangibles accounting research for a global group of national standards setters (refer to section 5.2.3.2). His final comment on this new IDF model was as follows:

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<th>Extract 5.20</th>
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<tr>
<td><strong>R.K.:</strong></td>
</tr>
<tr>
<td>“I think you’ve tied it up into quite a neat package.”</td>
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</table>

Therefore, the **new IDF model is acceptable by financial statements users as well as accountancy bodies.** In this way, it also contributes to CondNAT and responds to the request of the UK’s Accounting Standards Board (as part of the Financial Reporting Council) – towards R.K. and his authored discussion paper – for further research into the information needs of financial report users (Accounting Standards Board, 2009).

5.3.2 **Considering constraints: the predominance of the benefits of the new IDF model**

The cost/benefit analysis relates to P14 and respective Q_6a to Q_7b for the group of financial statements users. The majority of interviewees believe that the benefits outweigh the costs to implement and maintain the model. The reasons for this are manifold. For example, the model provides:
• A sophisticated managerial tool (for internal management);
• deep insights into the revenue-generating sources of a company;
• a better understanding of a company’s expected cash flows;
• a better verifiability of the substance of a company’s fair value;
• in general, verifiable information (especially for cash flows and cash flow forecasts).

The following responses illustrate the views of interviewees:

Extract 5.21 (Q_7b; M&A11), Extract 5.22 (Q_7b; I5) and Extract 5.23 (Q_7b; A1)

Question Q_7b): “Why do you think that the benefits/cost prevail(s)?”

M&A (11): “The benefits prevail. There are certainly the few constraints I have highlighted, but the benefits of this information are higher. There is a lot of information about a company’s cash flow and management’s reason for them and it shows the assets where such cash flows are coming from. This is very important information for any investor and I do say that the related costs would be justifiable for that.”

Investor (5): “This question is probably as difficult to answer as a similar question relating to general financial statements. I think it cannot be measured in money, but they are important for any investor. I think it is the same with this model. It provides a lot of useful information. Some is already known, but many other elements provide a different view of the topics that I know or it provides new information which I don’t know. I am sure that it would take time to prepare such information, but it should be worth doing it.”

Auditor (1): “Better management based on this more sophisticated tool is definitely a benefit as is the verifiability of financial information as a whole. […] The notes allow the reader to draw his/her own conclusions and to understand why a company has a certain cash flow forecast. Those are the two major benefits for me.”
As discussed in section 5.2.3.1.3, the costs associated with implementing and running the model are pervasive, but acceptable, as benefits prevail. This is an important criterion for the IASB to accept or reject the development of new accounting standards (QC35 of IASB (2010)).

These findings show that interviewees made a balanced decision between the costs and benefits. They show that they are aware of the pervasive constraints the new IDF model may have, such as:

- costs;
- time to be spent by more senior management/senior people due to the knowledge skills and experience necessary to perform the procedures required by the model;
- complex procedure;
- uncertainty inherent in the valuation as any similar valuation is subject to high uncertainty;
- some information (e.g. value of trade secrets, description of research activities, etc.) might be sensitive and could lead to competitive disadvantages;
- few interviewees indicated the limited reliability of information provided; and
- further challenges for auditors.

The following responses illustrate the views of interviewees relating to constraints:

| Extract 5.24 (Q_6a; M&A1), Extract 5.25 (Q_6a; I2) and Extract 5.26 (Q_6a; A5) |
|---|---|
| **Question 6a):** Are there any constrains you might think about regarding the proposed model (e.g. cost vs. benefit)? **M&A (1):** “Yes, I think there are some [constraints]. For example, this new model seems to be very complex and complexity is usually paid for by time and therefore cost. However, another point would be to ensure that the information is really reliable, free from bias and can be trusted. That gives me the impression of having an independent audit in its own right.” |
**Investor (2):** “One of the drawbacks of this approach is the extensive time and resources you need to have to implement and maintain such a system. […] I would guess that the time to prepare such reporting would probably be longer than the current time for the financial statements. At the end, it is a question of costs.”

**Auditor (5):** “Of course, the limited reliability is a severe concern […]. If I also take into account the challenges auditors face with this model, I think there are too many constraints for a useful model.”

Auditor (5) believes that the costs do not justify the possible benefits. He is one of the very few respondents who were overall reluctant about the usefulness of the model. He did not accept the model as useful nor believe that the model overall improves current financial reporting (see next section). This shows that he took technical as well as economic reasons into account to overall reject the usefulness of the new IDF model.

This higher reluctance, particularly from some auditors, is not surprising. It is rather natural and it could even be expected as discussed in section 5.3.1.1. As explained in section 3.2.4.2 (refer also to section 5.2.3.2) and discussed in section 5.3.1.1, auditors have a specific view of this topic. Their responsibility is to provide an opinion on whether the financial information provided by a company is free from material mistakes. They have no own interest in useful information, but it helps explain the general acceptability of financial information, as they act as intermediaries by assuring a certain quality of financial information. Again, this reconfirms the observation made in the first part of this research (section 3.3) and reflects auditors’ concerns that they may have to audit information that contains many judgmental elements rather than “hard facts”. Even though their reluctance could be expected, their in-depth feedback is valuable for the assessing the new IDF model.

In summary, interviewees are aware of the constraints in implementing and running the new IDF model, but the **majority agrees that the benefits of the model outweigh these constraints**, particularly the costs of them. R.K. also expressed that
this new model might require a lot effort, particularly at the beginning to implement it, but it can be done and it would be useful:

**Extract 5.27**

R.K.: “[...] I acknowledge the comment in theory that it is costly to do, but it can be done. [...] It’s worth the effort”.

5.3.3 **The most suitable place for the new IDF model – combining it with current financial reporting**

The issue of the most suitable position of the new IDF model in relation to current financial statements relates to P10 and the second part of P12 relating to R.K. as well as P15 relating to financial statements users. As described in section 5.2.3.1.2, R.K. was asked Q_1 (relating to P10) and Q_5 (relating to the second part of P12). Financial statements users were asked Q_8 (relating to their P15) as described in section 5.2.3.1.3. The following provides a summary of the responses relating to the most suitable place for the new IDF model from interviewees’ points of view:

<table>
<thead>
<tr>
<th>Place for the new IDF model</th>
<th>Integrated</th>
<th>Closely associated/attached</th>
<th>Separated</th>
<th>None of them</th>
</tr>
</thead>
<tbody>
<tr>
<td>M&amp;A Consultants</td>
<td>3</td>
<td>6</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Auditors</td>
<td>1</td>
<td>6</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>IFMs</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 5.2: Summary of responses from group of financial statements users relating to most suitable place for the new IDF model
The majority of constituencies would prefer that the model becomes part of the financial reporting as an attachment to currently published financial statements and reconciled with their figures and information. This is illustrated by the following statement:

Extract 5.28 (Q_8b; I6)

Question Q_8b: Where should the new model be placed in respect to financial reporting?

Investor (6): “I believe it should be audited, but I would not feel comfortable to change the current financial statements in a way which is so different to what is proposed here. So, taking this into account, the best looks like attaching it to current financial statements with a reconciliation to them. So, b) I would think.”

One auditor highlighted that the best proposal would be to fully integrate the model into current financial statements. However, more realistically, as he believes, is for such information to be included in the notes as a separate part of current financial statements as financial statements users would be more comfortable and less surprised about that:

Extract 5.29 (Q_8b; A1)

Auditor (1): “[...] certainly it is a question of acceptance whether such things are integrated into the traditional balance sheet, things which come from the glass bowl, let’s call it so, similar to the general fair value measurement and similar judgmental issues, or whether such information is better placed in the notes, i.e. attached to current financial statements with reconciliation to them […]. In this way, it will become subject to an audit as well […]. In an ideal world, it should be fully integrated, but realistically it should be put into the notes as an interim step in order to improve current financial reporting.”
The view of R.K. at the beginning of the interview (Q_1) was also to fully integrate the new model:

**Extract 5.30**

**R.K.**: “My preference, and I did say this in response to question 1, my preference would be A - integrated into currently published financial statements.”

Following the discussion in section 5.2.3.1.2, his response indicated that he was not exposed to initial dogmatic influences against significant changes to the current accounting rules relating to intangibles. His response shows that his subsequent responses are not biased in this respect. At the end of the interview (Q_8), he slightly changed his view to be in favour of attaching the new IDF model to current financial statements. Hence, his view corresponds to the majority of the constituencies interviewed. He stated it as follows:

**Extract 5.31**

**R.K.**: “My preference for this kind of information is to be integrated and therefore just show one balance sheet and my preference for the balance sheet is closer to what you’ve got in appendix 3 [note from author: this appendix 3 relates to the modified balance sheet] than what is currently on the balance sheet in accordance with IAS 38. [...] If I were pushed to say well what do I prefer, an IAS 38 balance sheet or your appendix 3, I think I’d go for an IAS 38 balance sheet [note from author: this refers to current financial statements] and have supplementary disclosures in the notes that provides the information that you provide.”

This slight change in his view is interesting. At the beginning of the interview, he thought that any new intangibles related model should be fully integrated. At the end
of the interview, he believed that the new IDF model should be attached to current financial statements in a way that it integrates the new IDF model into current financial reporting – and formally even into current financial statements, as the notes are part of these (International Federation of Accountants, ISA 200.13 (f), 2012\textsuperscript{112}; KPMG, 2012; 4.43 of IASB (2010)). Visually speaking, this means that another section would be added at the end of the current set of financial statements, i.e. most likely as a last section within the current notes to the financial statements.

In this way, the new IDF model would not be mixed together with current financial statements and readers would not be confused by the new and separated information. This would also be the preferred approach according to the constituencies described above. Finally, combining the IDF model with current financial statements in this way would also be consistent with the view of R.K. (refer to section 5.3.1.2).\textsuperscript{113}

In summary, there is broad consensus that the new IDF model should be attached to current financial statements. The attachment of the new IDF model can be made by way of complementing a separate section at the end of current financial statements but within the notes. The information included in the IDF model should be reconciled with current financial information. This approach would also ensure that the IDF model would become subject to the financial statement audit.

\begin{itemize}
\item \textsuperscript{112} ISA 200.13 (f): Financial statements – A structured representation of historical financial information, including related notes, intended to communicate an entity’s economic resources or obligations at a point in time or the changes therein for a period of time in accordance with a financial reporting framework. The related notes ordinarily comprise a summary of significant accounting policies and other explanatory information. The term “financial statements” ordinarily refers to a complete set of financial statements as determined by the requirements of the applicable financial reporting framework, but can also refer to a single financial statement.
\item \textsuperscript{113} This approach may also be regarded as a practical way, illustrated by the IDF model, to implement multi-column reporting as described in section 2.2.2., where the values are not next to each other but are rather presented separately from each other, but within the set of financial statements that is subject to audits.
\end{itemize}
5.3.4 Improvement in current financial reporting using the new IDF model

Q_9a and Q_9b relate to P16 as described in section 5.2.3.1.3. The following table summarises the responses to Q_9a, i.e. whether the proposed IDF model would improve current financial statements:

<table>
<thead>
<tr>
<th>IDF model improvement for current financial reporting</th>
<th>Yes</th>
<th>No</th>
<th>Not sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>M&amp;A Consultants</td>
<td>10</td>
<td>2</td>
<td>--</td>
</tr>
<tr>
<td>Auditors</td>
<td>7</td>
<td>3</td>
<td>--</td>
</tr>
<tr>
<td>IFMs</td>
<td>4</td>
<td>2</td>
<td>--</td>
</tr>
</tbody>
</table>

Table 5.3: Summary of responses from group of financial statements users relating to whether the new IDF model would improve current financial statements

The results are the same as those relating to Q_2a for overall decision-usefulness. Hence, the majority confirmed that the new IDF model improves current financial statements. For example, one respondent confirmed the improvement as follows:

**Extract 5.32 (Q_9b; M&A7)**

**M&A Consultant (7):** “The model provides a lot of new information, which is useful for a reader [...]. It certainly improves current financial statements; you don’t find that information currently in there.”

The responses of the other interviewees were similar to those to Q_2b. Therefore, please refer to section 5.3.1.1 for the related discussion.
5.4 Summary and conclusion – the usefulness of the new IDF model for common financial reporting

The new IDF model was validated with 28 financial statements users and with R.K., a technical director of the AASB, who is one of four members of the IASB intangibles project team, and who is also leading the intangibles project with the global group of national standards setters. Overall, financial statements users as well as R.K. confirmed the decision-usefulness of the new IDF model.

They generally accepted the new IDF model as an improvement on current financial reporting. Even though they all recognise certain constraints in implementing and operating this new IDF model on a recurring mode, they believe that the benefits outweigh these constraints. The majority of financial statements users believe that the most suitable position for this new model is attached to current financial statements. R.K. stated that the model should be shown as a supplement to current financial statements, but part of current reporting in the form of a separate section at the end of the notes. The latter approach means it would be combined with current financial statements in a way that both parts can be distinguished from each other, but they should together constitute financial reporting. Consequently, he also stated that the new IDF model should be audited in the same manner as current financial statements are.

Following the objectives of this part of this research, it can be concluded that:

- the preliminary stipulation of the representation function of the IDF model (refer to section 5.1) is successfully validated with various constituencies and with a representative of a financial accounting standard setter;
- the IDF model is useful for financial statements users and therefore it improves current financial accounting;
- the IDF model is also useful and generally acceptable for a financial accounting standard setter; it went successfully through the process of satisfying the IASB’s fundamental characteristics for financial information. First, the identification of economic phenomena that have the potential to be useful to users of the reporting entity’s financial information (here intangibles; refer to chapter 2). Second, the identification of the type of information about those phenomena that would be
most relevant if available and faithfully represented (chapters 3 and 4). Third, determination of whether that information were available and could be faithfully represented (chapters 4 and 5) (QC18 of IASB (2010); refer also to section 2.2.1.2).

- the new IDF model should be attached to current financial statements as part of a separate section of the notes, i.e. it should constitute together with current financial statements financial reporting going forward.
- the applied research methodology and related results contribute to the development of CondNAT, as described in section 3.2.1, a new branch of modern accounting research compared with traditional accounting research in the fields of PAT and NAT.

As this is an integral part of the overall research objectives described in chapter 3 and section 5.2.1, it also meets the objective of proposing a new IDF model that is useful and relevant (i.e. acceptable) for users and improves currently published financial statements as described in section 3.2.1.
Chapter 6 – Conclusions and recommendations

6.1 Introduction

This chapter pulls together the central themes of this research study and evaluates its achievements. It revisits the aim and objectives of the study (section 6.2), states recommendations to financial accounting standards setters (section 6.3), highlights the contribution of the study to current knowledge (section 6.4), describes the limitations of the study (section 6.5) and provides directions for future research (section 6.6). This chapter, and therefore the overall thesis, closes with final thoughts and conclusions (section 6.7).

The research study reflected the views of users of financial statements as regards information about intangibles within current financial reports. On the basis of their particular needs and requirements for information on intangibles, a new IDF model was developed following the main principles for building financial accounting models. The acceptability of the model was validated, and its usefulness was confirmed by users of financial statements as well as by an individual who belongs to a financial accounting standard setter. It was also clarified that the most suitable place for this new model is a separate section attached to the current financial statements and included in the overall financial reporting.

This study has thus developed a useful new IDF model for users of financial statements and shows the importance of changes in current financial accounting policies in relation to intangibles. Moreover, the new model also implies recommendations for the main principles of a new financial accounting standard relating to intangibles. This study paves the way for the application of new research methodologies in the context of developing a normative financial accounting theory that is referred to as CondNAT. Therefore, it also provides practical research evidence, illustrated by the development of the new IDF model, for the importance of a new stream of financial accounting research called CondNAR.
6.2 Revisiting objectives of and results from this study

In section 3.2.1, the following research objectives were determined for this study:

- Understanding the needs and views of providers, users and auditors of financial statements in relation to the disclosure of information on intangibles;
- Identifying factors that will improve the current practice of financial reporting on intangibles in currently published financial statements;
- Developing a model of disclosure related to intangibles that meets users’ needs, improves on current disclosure and is acceptable to providers and auditors and potentially to standard setters;
- Validating the acceptability and efficacy of the derived model with all the constituencies identified above; and
- Contributing to CondNAT.

Regarding the first objective, several propositions (P1 – P9) and research questions were discussed in chapter 2 relating to the usefulness of financial statements and, in particular, the usefulness in such statements of information related to intangibles. The related research findings and results can be summarised as follows:

- Different stakeholders have different understandings of the term ‘knowledge’/‘intangibles’, and these understandings are different from what is found in the literature (P1):

  Contrary to expectations, the study found that all users of financial statements have a similar understanding of what is meant by ‘knowledge’ and ‘intangibles’, as those terms are defined in section 2.1. ‘Knowledge’/‘intangibles’ seems to mean everything that contributes to a company’s wealth and value and that is not a physical or financial asset. This is similar to the definition given by Lev (2002, 2003), who states that everything that contributes to profitability and that is not a physical or financial asset is an intangible. In other words, earnings that cannot be traced to physical or financial assets must come from intangibles. Thus there is some level of connection between the literature and stakeholders’ understandings. However, in addition to the definition above, users of financial statements had a particularly distinct view on intangibles, as they required a more granular consideration of the various components forming the total
intangibles of a company, and indicated the relevance of the unique combination and interaction between these components (section 3.3.6).

- Current financial statements no longer fulfil their original purpose (P2):
  Financial statements lack some information that would be useful, but they are still useful, from their users’ points of view, for making decisions. Therefore, they cannot be deemed to be useless, as many authors in the literature claim. As a consequence, financial statements should be enhanced (section 3.3.1).

- The study found that the majority of users of financial statements require financial information to be verifiable if it is to be useful for making decisions; this is in contrast to the view of the IASB, which treats verifiability as a qualitative characteristic that enhances, rather than establishes, usefulness (see section 2.2.1.2) (section 3.3.7). Stakeholders have a different understanding of reliability with regard to information about knowledge/intangibles in published financial statements (P3):

- Users of financial statements and financial accounting standard setters such as the IASB have similar views of what renders financial information useful. Any differences mainly exist in the hierarchy of different qualitative characteristics. The main issue in this respect refers to verifiability and comparability.

- Stakeholders already recognise the value of intangibles for knowledge-intensive companies; this lies outside the current financial reporting framework. How and to what extent do they integrate such information into their decision-making processes? (P4):
  Users of financial statements already consider value relevant intangibles related information in their decisions, but they do this in different ways, and in most cases rather implicitly. They are less interested in single elements than in the combination and interactions of the non-tangible elements that contribute to a company’s future development. Most users of financial statements explain that they identify such non-tangible elements and their interactions in discussions with management about major value drivers. Such information is then incorporated into their own cash flow projections and analyses, particularly their analyses of the sources of future cash flows. It is concluded that information
related to intangibles is value relevant, as claimed by the literature, and that such information does not come from current financial statements. This further indicates that information that is useful for decision-making, particularly information related to intangibles, is missing from current financial statements (section 3.3.5).

The result that users of financial statements already consider and incorporate in their decisions value-relevant information related to intangibles shows that some findings from the PAT literature cannot be generally confirmed. For example, the trading market share price being a multiple of book value, or high volatility of shares – as an indicator of high uncertainty about the company’s value – are used by PAT researchers as indicators that constituencies, particularly investors, do not properly recognise, or are not able to assess and consider, the intangible-specific characteristics of such companies (Gosh and Wu, 2007; Sällebrant et al., 2007; Mouritsen, 2005; Lev, 2001; Carroll et al., 2000; Edvinsson, 2000; see also section 2.5). In contrast to this view, this study shows that investors recognise company-specific information related to intangibles, even though they do this in different ways, but that such information does not come from within the current financial statements. Hence the difference between market price and book value might indicate that many intangibles are not recognised in the financial statements. However, volatility in share price does not necessarily reflect the inability of investors to consider the value-relevant information of a company related to its intangibles. What this volatility might reflect is the inherent specific nature of intangibles (AASB, 2008; see also section 2.2.1.2), which might be associated with higher uncertainty (section 3.3.5).

- Stakeholders do not require information about knowledge/intangibles in financial statements to be given in accordance with the current financial accounting framework (P5):

  Although some debates exist in the literature about the usefulness of general accounting principles (see sections 2.2.1.2 and 2.2.1.4), this study generally confirms the requirement to comply with those principal characteristics laid down in the Conceptual Framework of the IASB for financial information in financial statements.
Users of financial statements more strongly associate verifiability with reliability than do financial accounting standards setters (see section 2.2.1.2); this latter group regards verifiability only as an enhancing characteristic of financial information (section 3.3.8).

It can be concluded that all qualitative characteristics should be considered when information related to intangibles is disclosed in the financial statements, even though opinions on the order and hierarchy among these characteristics are different between the IASB and users of financial statements (see section 2.2.1.2) (section 3.3.8).

Furthermore, some interpretations of these qualitative characteristics, such as reliability, also seem to differ between stakeholders and financial accounting standards setters. The latter result also supports the preliminary and indicative findings of the AASB that the reliability of measurement is a function of, inter alia, the availability of relevant data for each intangible item (AASB, 2008) or, in other words, that reliability depends on verifiability (see also section 2.2.1.2). This research concludes that any new or enhanced IDF model should comply with the needs of stakeholders (section 3.3.8).

- The intangible valuation and reporting models that the literature regards as highly relevant are not considered by the interviewees to be very relevant (P6): Users of financial statements do not find any of the valuation and reporting models for intangibles proposed in the literature to be highly relevant and useful. This finding is particularly true for SC methods (section 3.4.2).

The needs of users of financial statements in respect of financial statements and information related to intangibles are different from the needs described in the literature. Such users prefer a more holistic view of the information from a company related to its intangibles. They have particular needs and wishes as regards the information about intangibles that they would like to see in an enhanced IDF model. Overall, they would prefer a holistic view of a company’s intangible resources, given on the basis of verifiable information. The information relating to this holistic view does not need to be perfectly reliable, in the sense of being objective and perfectly true, but it has to be verifiable, since this makes the information reliable from the users’ point of view (see also sections 3.3.7 and 3.3.8) (section 3.4.2).
Stakeholders find valuations useful, and want to see valuations and, in general, more disclosures of intangibles/knowledge, in current financial statements (P7): Users of financial statements generally regard information related to intangibles, such as valuations and reporting, as useful. Some interviewees raised concerns about how such information could be made reliable (section 3.3.4). When their concerns about having sufficiently reliable information related to intangibles were explored, it became clear that stakeholders and of financial accounting standards setters have different interpretations of reliability. However, it also became evident that users of financial statements are concerned about reliability, and that this is particularly true for disclosures of intangibles. This result shows that users of financial statements have a different understanding of the desired quality and characteristics of disclosures of information related to intangibles (section 3.3.4). It also became evident that current financial reporting should be enhanced by including information related to intangibles (section 3.3.4).

Current stakeholders recognise the main characteristics and value drivers of companies in general, and, in particular, of knowledge-intensive high-tech companies; if this is the case, to what degree do they recognise them and how do they do this? (P8): The main value drivers of high-tech companies (such as biotech companies) are, according to the stakeholders, non-tangible in nature. The results also indicate that the combination of single value drivers is a significant contributor to the added value of a company. Most value drivers are deemed to be relevant for fund managers’ and banks’ decision processes even though they are not currently presented in financial statements, which confirms the claims of the literature as discussed in section 2.5 (section 3.3.2).

Stakeholders need more, different and more differentiated information than that currently published in financial statements, so that they can make better decisions (P9): Users of financial statements want to have more and deeper information about the company’s products, but they also want a view about future business
development, the company’s current asset values and revenues, how the company intends to create positive net cash flows in future years, and how this relates to the company’s strategies and objectives. Furthermore, it has been noted that fund managers see the need for several additional pieces of information in financial statements, but they do not want to have such information published in the financial statements because they already receive it through private channels. These results also confirm the view of the literature that current financial statements have to be enhanced, but the results go beyond the current literature as regards the specific type of information needed if the usefulness of current financial statements is actually to be enhanced (section 3.3.3).

Following these results, factors were identified that could be used to improve the current practice of financial reporting with regard to intangibles in published financial statements. Several useful components for a new IDF model were identified and extracted from the interviews (section 3.3.9) and the follow-up questionnaires and interviews (section 3.4.2) (section 3.5).

Based on these components, a new IDF model was developed, bearing in mind that current financial accounting modelling differs from general model building theory. The main difference is that modelling in financial accounting does not seem to be as rigorous and comprehensive. Some approaches tend to be more heuristic and to cover only particular elements. However, the researcher has argued that financial accounting modelling should follow similar principles to those used in general modelling theory (particularly in the field of social sciences research), to develop a new theory. On the basis of the principles of model building theory and the various useful components that were identified, a new IDF model was developed, and this was regarded as a significant improvement for financial reporting when compared with the current financial reporting related to intangibles (chapter 4).

After having developed the new IDF model, its acceptability and usefulness (i.e. relevance and reliability) were validated with different users of financial statements and an important representative of a large financial accounting standard setter. The most suitable position for the IDF model in relation to current financial reporting was also clarified (chapter 5). The validation and clarification were carried out using
several propositions (P10 – P16) and related questions. The findings and results from this can be summarised as follows (chapter 5):

- The new IDF model provides reliable information (P11) and is acceptable to a financial accounting standards setter as an external financial reporting framework that is either integrated into or associated with current external financial reporting frameworks (P12):
  R.K. generally confirmed the usefulness and acceptability of this new IDF model (section 5.3.1.2). The new IDF model does not only contribute to CondNAT, but it also responds to the request by the UK’s Accounting Standards Board for further research to be performed into the information needs of financial report users (Accounting Standards Board, 2009) (section 5.3.1.2).

- The new IDF model is regarded as useful by users of financial statements (P13):
  The usefulness of the new IDF model, as initially stipulated (refer to chapter 5) and as subsequently validated (chapter 6), was clearly confirmed by the majority of the representatives interviewed (section 5.3.1.1).

- The benefits of the new IDF model outweigh the constraints and costs of implementing and using it (P14):
  The interviewees described some constraints in implementing and running the new IDF model, but the majority also agreed that the benefits of the model outweighed those constraints, and particularly the costs. This also corresponded to the view of R.K. (section 5.3.2).

- The new IDF model should be part of current financial statements, and should be either an integral part of or attached to the statements, but should not be completely separated from them (P10; P15):
  There was broad consensus that the new IDF model should be attached to current financial statements as part of overall financial reporting. The new IDF model could be in a separate section at the end of current financial statements, but within the notes. The information included in the IDF model should be reconciled with current financial information. This approach ensures that the IDF model becomes subject to the financial statement audit (section 5.3.3).
The new IDF model improves current financial statements (P16):

Overall, the majority of interviewees confirmed that the new IDF model improves current financial statements. Some of the few opponents stated that it does not improve the usefulness of the financial statements for them, as they already received similar information through private communication channels. This result is consistent with the results of the previous part of this study (section 5.3.4).

Overall, the new IDF model was regarded as useful by the interviewees. The findings from the first part of the first case study (chapter 3) revealed that usefulness depends on whether the information is relevant and reliable, whereas reliability is strongly associated with verifiability. Verifiability is much more important for users of financial statements than is suggested in the IASB’s Conceptual Framework (IASB, 2010), and should be treated as a fundamental qualitative sub-characteristic associated with reliable information. This finding was also considered and directly incorporated in the new IDF model, through the various detailed disclosure requirements, and this was validated in chapter 5.

The above results also contribute to CondNAT and related research. The traditional development of financial accounting models based on the stipulated conventions does not correspond to modern model building theory. The approach for building a financial accounting model that is developed and adopted in this study supports the need for CondNAT and related research. CondNAR can better reflect phenomena related to financial accounting in the real world in a way that allows for a better transformation of such phenomena into useful accounting principles and regulations (section 4.2).

In summary, the results as described above support the chosen research approach and the final outcome of this study. In particular, they provide strong evidence for the achievement of the objectives set for this study.
6.3 Recommendations to financial accounting standards setters

There are three main recommendations for the financial accounting standards setters. Based on this study, the current financial accounting rules in respect of the disclosure of information related to intangibles should change. The results, particularly the newly developed IDF model, support the view of R.K. that IFRS 3\textsuperscript{114} should be consistently applied in every case (that is, not only for business combinations, but also on a recurring basis when no business combination has occurred (refer to section 5.3.1.2)). The principles of IFRS 3 should at least replace the main financial accounting standard for intangibles – IAS 38. However, the proposed model also goes beyond the current IFRS 3. It requires a more granular view of information related to intangibles. In particular, it requires the interaction between the different single intangible elements, and between these elements and the other tangible assets, to be shown. The new model also requires the disclosure of more detailed information that meets the needs and requirements of the users of financial statements. Therefore, applying IFRS 3 to all intangibles, whether or not they are purchased in a business combination, and whether or not they are internally created or externally purchased, could be a first step. A second step would be the full application of the new IDF model proposed here.

The second recommendation refers to the process of developing new financial accounting standards. Developing new financial accounting models not only contributes to the new branch of CondNAT, but it also shows that financial accounting standards setters should reconsider their current processes. It would improve the quality of new standards if they were based on the findings and results of CondNAR.

Finally, financial accounting standards setters should reconsider the current hierarchy and definitions of the various levels of the qualitative characteristics of financial information, particularly with regard to reliability and verifiability and to the disclosure of intangibles. The study found that financial information should be verifiable in order to be useful for decision-making, or, in other words, that verifiability should be a fundamental qualitative characteristic rather than an

\textsuperscript{114} International Financial Reporting Standard No. 3 – Business Combination.
enhancing qualitative characteristic of information used for making decisions (section 3.3.8).

6.4 Contribution to knowledge

This study contributes to current knowledge in different ways:

- It confirms several of the observations made by Holland (2006) (e.g. that institutional investors already obtain value-relevant information related to intangibles through private communication channels).

- It provides in-depth insights into the needs and requirements of different users of financial statements, such as investors and creditors, with regard to disclosures related to intangibles. It is the first study that combines investors and creditors in a qualitative research strategy in order to obtain a thorough understanding of their needs as regards information related to intangibles in the context of current financial reporting. In this respect, this study also responds to the call recently made by Graaf (2013) for future research related to intellectual capital reporting in financial reports and for an in-depth understanding of the needs and requirements of the users of financial statements.

- A new IDF model was developed. The acceptability and usefulness of this model was validated with and confirmed by users of financial statements as well as a representative of a financial accounting standards setter. This is the first IDF model to be derived from the needs and requirements of the users of financial statements and developed in the context of current financial reporting. It was developed to make sound and empirically validated policy recommendations to accounting standards setters.

- Mattessich (1995) outlined the main idea for a new accounting theory that he referred to as CondNAT. This theory should handle normative accounting issues and make policy recommendations in a similar way to NAT, but, in contrast to the treatment under NAT and PAT, the issues should be analysed and the policy recommendations should be based on empirical research methodologies. This study is the first empirical study in this field. It is the first empirical research
contribution to Mattessich’s theoretical outline. In particular, it paves the way for a new branch of financial accounting research: CondNAR.

6.5 Limitations

Four main limitations to this study must be mentioned. The most important caveat relates to the issue of the generalisability of qualitative empirical research studies. As discussed in section 3.2.3, it is generally not expected that qualitative research studies can be generalised from a small sample to a population (Collis et al., 2009; Corbin et al., 2008; Gomm, 2008; Vaivio, 2008; Creswell, 2007; Moll et al., 2006; Charmaz, 2005a). Moreover, the research findings are usually context-specific, are usually difficult to replicate in other contexts because of access constraints, and are not necessarily stable over time (Gomm, 2008; Berry and Otley, 2004; Bryman, 2001). However, research findings can be generalised to theories, according to Bryman (2001), rather than to populations based on statistical criteria. Further, they can advance theory (Stake, 2005) if the theoretical inferences from the qualitative data are properly made and the full detail of the research process is disclosed so that other researchers may assess the generalisability and judge the researcher’s credibility (Corbin et al., 2008; Holliday, 2002; Bryman, 2001; refer also to section 3.2.3).

Another limitation of this study relates to the issue that the new IDF model is not particularly well developed for different kinds of companies and specific industries such as small, non-listed football clubs or artisan micro businesses. Therefore, the IDF model may need further development and refinement for specific industries like these.

The IDF model described in this study (and particularly in section 4.3) is also not explicitly tied into the recently issued IFRS for small and medium-sized entities (SMEs) (commonly referred to as “IFRS for SMEs”), which was published in July 2009 and provides a simpler set of financial accounting rules than the full IFRS. The

115 Business with fewer than 10 employees according to the European Commission and the UK Department of Trade and Industry (DIT, 2013).
applicability and application of the IDF model to SMEs may also be an area of further research. However, the new IDF model described in this study is developed along the lines of the general objectives, usefulness and limitations of general purpose financial reporting in accordance with IFRS (IASB, 2010), and has been validated with a financial standard setter as well as stakeholders from all types of stock exchange listed companies, including large and medium-sized (DIT, 2013) entities.

Finally, this study assumes as a prerequisite the usefulness criterion established in the conceptual framework of the IASB (2010). An assessment of the appropriateness of the usefulness criterion for general purpose financial reporting such as IFRS, particularly as it relates to, for example, social welfare, is beyond the scope of this research.\textsuperscript{116} However, a different criterion may lead to a scenario where the welfare may not be greater than after the implementation of the new IDF model.

In conclusion, more qualitative empirical research is needed, particularly in relation to small and artisan micro businesses and the new IFRS for SMEs, to tailor the IDF model to these specific cases.

6.6 Avenues for future research

This research study focused on improving information related to intangibles in the context of published financial reports and on the basis of empirical investigations. In the course of this study, a new IDF model was developed, based on the particular needs and requirements of the users of financial statements. This was validated and accepted, and users of financial statements confirmed the usefulness of having this new model attached to the financial statements within current financial reporting.

In the course of this study, several issues that could direct future research were identified. In section 3.3.5, it was shown that some findings from the PAT literature cannot be generally confirmed. For example, the trading market share price being a multiple of book value, or high volatility of shares – as an indicator of high

\textsuperscript{116} Such an assessment could be found, for example, in Puxty et al. (1983) and Laughlin et al. (1981). See also section 3.1.
uncertainty about the company’s value – are used by PAT researchers as indicators that constituencies, particularly investors, do not properly recognise, or are not able to assess and consider, the intangible-specific characteristics of such companies (Gosh and Wu, 2007; Sällebrant et al., 2007; Mouritsen, 2005; Lev, 2001; Edvinsson, 2000; Carroll et al., 2000; refer also to section 2.5). In contrast to this view, this study shows that investors recognise company-specific information related to intangibles, but that they all obtain this differently. In all cases, financial statements are not the source of such information. Users, particularly investors and creditors, find their own ways of obtaining the necessary information, such as by gaining publicly available information through private channels outside the financial statements. Hence, the difference between the market price and the book value might only indicate that many intangibles are not recognised in the financial statements. Moreover, volatility in share prices does not necessarily reflect the inability of investors to consider the intangible-related value-relevant information of a company. The volatility might instead reflect the specific and inherent nature of intangibles (AASB, 2008; see also section 2.2.1.2), which might be associated with higher uncertainty. This issue should be further explored.

As indicated in sections 3.3.4 and 3.3.8, views on the order and hierarchy among the different characteristics (fundamental, qualitative and sub-fundamental characteristics) of financial information differ between the IASB and users of financial statements. As this study has not particularly focused on possible changes to the financial accounting framework, but has instead concentrated on understanding the views of users of financial statements relating to the general usefulness of financial statements in relation to intangibles, it would be useful to explore this issue in more detail and develop a user-based conceptual framework using CondNAT. This would help to establish a sound and empirically rooted conceptual framework of relevant characteristics, which would become the basis for new financial accounting standards.

As regards the conceptual framework, further analysis and empirical study could be carried out into whether the IASB’s (or the FASB’s) decision-usefulness criterion in the conceptual framework is indeed the most appropriate criterion. The disclosure of intangibles could be used as a base case. The usefulness criterion could be compared
to alternative approaches such as a balanced approach between users and information providers or the organisational criterion that considers different objectives such as social welfare (which has already been analytically assessed by Puxty et al. (1983) and Laughlin et al. (1981) (see also section 3.1)). While this research started from this fundamental normative criterion in IFRS, as shown by the phrase “user-based approach” in the title (section 2.2.1.1), it could be expanded to explore whether another approach to enhanced financial reporting related to the disclosure of intangibles would at least have led to the same improvement results. Indeed, such research related to the objectives of external financial reporting does not even need to be limited to the disclosure of intangibles.

Similarly, empirical analysis could be performed, and could be illustrated by, for example, the case of the disclosure of intangibles, into whether the organisational worldview, compared to the user worldview currently applied by the IASB (and FASB) for their standard setting processes, as described by Laughlin et al. (1983), is more appropriate.

Continuing with these ideas, further research could be carried out to verify whether the enhancement of usefulness of the IDF would also lead to a general improvement in economic welfare, as discussed by Puxty et al. (1983). If not, this research issue would fall back to the issues described in the preceding two paragraphs.

More generally, it seems to be important that current financial accounting standards should be explored from a CondNAT view; that is, that their usefulness should be validated and any necessary modifications aligned with the needs and requirements of the users of financial statements.

As has been shown, financial accounting standards are not developed on the basis of the needs and requirements of their users. Instead, the Financial accounting standards setters stipulate new financial accounting rules. This study has described the gap between current financial accounting standards and the views and expectations of the users of financial statements, and has illustrated this with the topic of the disclosure of information related to intangibles. This issue gives rise to another issue: who governs the financial regulators? This question is not new (see Holland, 2006), but it is raised again in this study. Future research could explore this issue in more detail.
In section 2.2.2, different measurements and reporting models and approaches for intangibles were described. These are the outcomes of the first and second stages of the intellectual capital research carried out by Guthrie et al. (2012). As described by Dumay (2013), Dumay et al. (2013), Guthrie et al. (2012) and O’Donnell et al. (2006), the third stage of intellectual capital research is mainly concerned with the analysis of intellectual capital practices in action, which corresponds to a shift from “what is intellectual capital?” to “how is intellectual capital?”. Dumay (2009) emphasises that this third stage addresses the practice of intellectual capital and moves away from a rather static and theoretical view on developing and implementing frameworks and approaches for intellectual capital. This study does exactly that; it is about understanding intellectual capital (here, intangibles) from the points of view of users of financial statements. Since these authors refer to the broad area of intellectual capital, many more studies have to be undertaken, relating not only to CondNAT, but also to, for example, the general management of intellectual capital. These studies should explore the practice of intangibles and assess how they are perceived and managed in this practice.

This empirical research showed that users of financial statements are not interested in a particular measurement and reporting model and approach (section 3.4.2). This is consistent with the observation of Dumay et al. (2013) that stakeholders do not seem to be interested in a particular measurement and reporting approach, even though researchers and practitioners continue to develop new intellectual capital measurement and reporting models. Facione (2007) refers to this behaviour as ‘Dominance Structure’; it is seen when certain people tend to elevate the merits, and diminish the accompanying flaws, of a particular option. In this way, they make their option the dominant option and ignore the alternatives and their potential benefits as well as relevant issues. Therefore, the particular needs and expectations of stakeholders other than users of financial statements should be explored in relation to reporting on intellectual capital. The current practice seems to be disconnected from the theoretical development of an intellectual capital model.

This study focused on the disclosure of information related to intangibles for the users of financial statements, but other groups (e.g. people internal to the company, such as management) might be less interested in financial reports and in specific
intellectual capital information (e.g. managerial intellectual capital information). Such groups might not exist, if all relevant parties used the new IDF model developed here. However, other groups, such as the management of a company, may wish to have a particular view, or just a different view, of some elements of intellectual capital. This issue could be further explored in line with the third stage of intellectual capital research (e.g. Dumay, 2013; Dumay et al., 2013; Guthrie et al., 2012; O’Donnell et al., 2006).

The measurement of intangibles is discussed in section 2.3. The discussion shows that significant judgments have to be made at different stages of the measurement process. This may lead to different results from different people using the same methodological approach. In statistical terms, the distribution around the mean of the results from different people is likely to be very wide. Dumay (2012) believes that intangibles cannot be measured in monetary terms at all. The interviews also revealed that users of financial statements hesitate to accept just one number to represent a model-based fair value for intangibles (see section 3.3.4). This is also why Copeland et al. (2000) suggest a comprehensive value metrics framework that overcomes the disadvantages of different single performance measures by linking various economic measures to describe different aspects of performance. Their approach is based on four principally different classes of measurement methodologies. Apart from the general class description, there is no further standardisation. The specifically applicable measures of each class of measures are very likely to differ; they may also vary from one intangible item to another, and could even differ for a similar intangible item with different owners. However, even this more comprehensive, holistic and flexible methodology suggested by Copeland et al. (2000) would probably not reduce the uncertainty about the true fair value of an intangible.

Moreover, the current approaches, particularly the approach suggested by Copeland et al. (2000), may lead to arbitrary, non-comparable results across different intangible items under measurement (see section 2.3.3). The issue could, and should, be further explored in different directions. First, the actual measurement behaviour of users of financial statements and other relevant parties could be investigated in relation to the model-based fair value measurement of intangibles. Second, the
expectations of users of financial statements and other relevant parties in respect of model-based fair values could be investigated. Third, the estimated fair values of intangibles should be validated, for example through some kind of back-testing, to understand their prediction power and their surrounding circumstances and conditions required for high prediction quality (i.e. the predicted fair value should be as close as possible to actual transaction prices).

The IDF model provides an integrated way (through a rolling comparison between predicted and actual results in a later stage) for users of financial statements to track the fair value movement and reliability of the information provided, but the quality of the predictions and the reasons why some predictions of fair values of intangibles are better than others should be explored in more detail. All these studies may contribute to the theory of behavioural finance (Down, 2004; see also section 3.2.1).

Another issue that could be further explored is the value of networks, which are also called relational capital. Edvinsson (2013) regards this area of intellectual capital as a crucial challenge in further developments. This issue is covered in the new IDF model, but only for the purpose of disclosure in relation to financial reporting. An in-depth understanding of the value of networks and the reasons for this value could also help those who prepare financial statements to improve the quality of their disclosed information even further.

The new IDF model could be validated with companies that are generally not deemed to be knowledge-intensive entities, such as many football clubs, and particularly smaller ones. It would be particularly interesting to understand whether the new IDF model could even be useful for companies that are not knowledge-intensive and for which intangibles accounting is generally deemed not to be relevant, because of the specific nature of the new IDF model.

Furthermore, the applicability and application of the IDF model as described in this study could also be validated for the recently issued IFRS for small and medium-sized entities (SMEs) (“IFRS for SMEs”), published in July 2009.

This study contributes to the development by the financial accounting standards setters of a new accounting standard related to intangibles that is derived from the
views of the users of financial statements. In addition, it may be regarded as ground-breaking, as it paves the way for a new approach to financial accounting research and for building the related theory (CondNAT).

However, this study does not only contribute to CondNAT by proposing a user-based IDF model; it also shows the relevance of studying the particular needs and requirements for intangibles-related models and approaches directly with their users through qualitative research studies. Moreover, it may stimulate the application of qualitative research methodologies in other areas such as finance, particularly behavioural finance, to derive new models directly from the understanding and views of individuals. Overall, many specific topics within these areas could be further explored. Some of these are briefly indicated above.

6.7 Final thoughts and conclusion

This chapter has summarised the main themes of the thesis. It has evaluated what has been achieved by this study and highlighted its contribution to the body of knowledge. Chapter 1 stated that the aim of the study was to enhance the usefulness of financial statements in respect to intangibles-related financial information for users of financial statements.

Several objectives aligned to the aim of this study were defined:

- Understanding the needs and views of providers, users and auditors of financial statements in relation to the disclosure of information on intangibles;
- Identifying factors that will improve the current practice of financial reporting in published financial statements with regard to intangibles;
- Developing a model of disclosure related to intangibles (the IDF model) that meets users’ needs, improves on current disclosure and is acceptable to providers and auditors and potentially to standard setters;
- Validating the acceptability and efficacy of the derived model with all the constituencies identified above.
It was also stated that this research study contributes to CondNAT, through its aim, objectives and particular methodology.

This chapter provided a summary of the research findings and results and demonstrated how the aim was met and the objectives achieved. It highlighted the contribution to knowledge and extracted relevant recommendations for financial accounting standards setters. By proposing a new way of making financial accounting disclosures, it also provided valuable new insights into previously neglected but important methodological aspects of developing new financial accounting theory. This is the first time that the conceptual idea of CondNAR has been applied in research practice to develop new financial accounting theory.

This research has therefore not only provided a new empirically-based IDF model and discussed many new avenues for future research, but it has also paved the way for and should stimulate researchers to apply new research methodologies to develop financial accounting theory.
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## Appendix I – Research propositions and related interview questions

<table>
<thead>
<tr>
<th>No. of Proposition in thesis</th>
<th>Proposition</th>
<th>Section where Proposition is raised</th>
<th>No. of Proposition in Questionnaire</th>
<th>Related Question to Proposition</th>
<th>No. of Question in Questionnaire</th>
<th>Section where related results are discussed</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>Constituencies have a different understanding about the meaning of knowledge among each other and compared with the literature</td>
<td>2.1.3</td>
<td>6</td>
<td>What is the meaning of “knowledge” relating to biotech companies as you have used it before?</td>
<td>6.1</td>
<td>3.3.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6.2</td>
<td>Can you define “knowledge” in relation with biotech companies in one sentence?</td>
<td></td>
<td>3.3.6</td>
</tr>
<tr>
<td>P2</td>
<td>The financial statements do no longer fulfil their original purpose</td>
<td>2.2.1.1</td>
<td>1</td>
<td>What do you think is the principal purpose of financial statements?</td>
<td>1.1</td>
<td>3.3.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.2</td>
<td>What is the purpose of Financial Statements for you?</td>
<td></td>
<td>3.3.1</td>
</tr>
<tr>
<td>P3</td>
<td>Constituencies have different understanding about reliability with regard to information within financial statements.</td>
<td>2.2.1.2</td>
<td>7</td>
<td>What is the meaning of “reliability” for you in relation with reporting and valuing of “knowledge”?</td>
<td>6.3</td>
<td>3.3.7</td>
</tr>
<tr>
<td>P4</td>
<td>Constituencies already recognise, outside the financial statements and in different manners, the knowledge value within a company.</td>
<td>2.2.1.4</td>
<td>5</td>
<td>How do you identify (manage) and evaluate “knowledge” in a (your) company?</td>
<td>4.1</td>
<td>3.3.5</td>
</tr>
<tr>
<td>P5</td>
<td>Constituencies do not require that information in financial statements including information about knowledge is in accordance with the</td>
<td>2.2.1.4</td>
<td>8</td>
<td>Please rank (by ticking) each the following from 1 (very important) to 5 (not important):</td>
<td>6.4</td>
<td>3.3.8</td>
</tr>
</tbody>
</table>
general financial accounting framework

For reliability of information and data in financial statements, how significant is for you …

- verifiability of these data and information
- representation faithfulness of these data and information
- neutrality of these data and information
- comparability of these data and information
- consistency of these data and information

<p>| P6 | Current knowledge valuation and reporting models proposed in the literature as highly relevant are not that relevant from the points of view of interviewees | 2.2.2 | 9 | What kind of information, do you think, should be included in a potential knowledge (valuation &amp; reporting) model? | 4.2 | 3.4.2 |
| P6 |  |  |  | Please rank the three most important models from No. 1-23 (of Q_4.2) above in order of their importance! | 4.3 |
| P7 | Constituencies find it useful and do want to see the valuation and reporting of knowledge in financial statements. | 2.3.4 | 4 | What do you think about reporting of “knowledge” in financial statements of biotech companies? | 3.1 | 3.3.4 |</p>
<table>
<thead>
<tr>
<th>Question</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would it be (decision) useful – from your point of view – to publish information about “knowledge” in biotech companies in financial statements?</td>
<td>3.2  3.3.4</td>
</tr>
<tr>
<td>Why would information about “knowledge” be useful/not useful from your point of view?</td>
<td>3.3  3.3.4</td>
</tr>
<tr>
<td>Do you think, reporting and valuing of knowledge would be considered useful by other constituencies (banks, investors, entrepreneurs)?</td>
<td>3.4  3.3.4</td>
</tr>
<tr>
<td>Imagine Knowledge could be valued and reported reliably in financial statements (i.e. in a perfect world), would financial statements be more useful from your point of view – and why?</td>
<td>3.5  3.3.4</td>
</tr>
<tr>
<td>Do you think, financial statements would be considered more useful by other constituencies, if knowledge could be valued and reported reliably?</td>
<td>3.6  3.3.4</td>
</tr>
<tr>
<td>Constituencies do recognise the main characteristics within the biotech industry although they are not valued</td>
<td>P8</td>
</tr>
<tr>
<td>What do you think are the main characteristics of the biotech industry?</td>
<td>2.4  2.1.1  3.3.2</td>
</tr>
</tbody>
</table>
and appropriately reported in the financial statements (e.g. compared to oil or steel industry)?

<table>
<thead>
<tr>
<th>Question</th>
<th>Code</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the main value drivers of biotech companies?</td>
<td>2.1.2</td>
<td>3.3.2</td>
</tr>
<tr>
<td>Constituencies do need more and different information than that in financial statements to make better decisions.</td>
<td>P9</td>
<td>2.4</td>
</tr>
<tr>
<td>What do you think has to be changed in financial statements of biotech companies, i.e. included or not included in these financial statements, so that these financial statements fulfill their principal purpose?</td>
<td></td>
<td>2.2</td>
</tr>
<tr>
<td>What do you think has to be changed in financial statements of biotech companies so that you can better make decisions based on these financial statements?</td>
<td></td>
<td>2.3</td>
</tr>
<tr>
<td>The newly developed IDF model should be part of current financial statements, either as an integral part or attached to them.</td>
<td>P10</td>
<td>3.7.1.2</td>
</tr>
<tr>
<td>Assuming a Knowledge Valuation and Reporting Model (KnowVRM) exists, what would you prefer as a communication/reporting tool?</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>a) Integrated into currently published financial statements;</td>
<td></td>
<td>5.3.3</td>
</tr>
<tr>
<td>b) Attached to currently published</td>
<td></td>
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</table>

- P9: Constituencies do need more and different information than that in financial statements to make better decisions.

- P10: The newly developed IDF model should be part of current financial statements, either as an integral part or attached to them. (R.K.)

- Assuming a Knowledge Valuation and Reporting Model (KnowVRM) exists, what would you prefer as a communication/reporting tool?
  - a) Integrated into currently published financial statements;
  - b) Attached to currently published
financial statements with reconciliation with the financial statements’ figures and information;
c) Supplementary information separated from currently published financial statements (similar to environmental, social and ethical reporting);
d) Do you have any other suggestions on how to communicate such a KnowVRM?
Please state:

<table>
<thead>
<tr>
<th>P11</th>
<th>The new model should provide reliable information at least to a certain degree and should not be fully arbitrary. (R.K.)</th>
<th>3.7.1.2</th>
<th>Do you think such a KnowVRM should be audited or reviewed by an independent accountant?</th>
<th>2</th>
<th>5.3.1.2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>What level of reliability would you prefer?</td>
<td></td>
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<tr>
<td></td>
<td>o Reasonable assurance</td>
<td></td>
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</table>
based on an audit;

- Moderate level of assurance (negative assurance) based on a review;
- Consistency with other audited financial statements information
- No assurance.

<table>
<thead>
<tr>
<th>P12</th>
<th>3.7.1.2</th>
<th>What do you think about the enclosed KnowVRM?</th>
<th>4</th>
<th>6.2.1.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>The new IDF model is acceptable for an accounting standards body as an external financial reporting framework either integrated into or associated with current external financial reporting frameworks. (R.K.)</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

| 5 | 5.3.1.2 | What do you think now after becoming acquainted with the KnowVRM from above (Question No. 4): Which communication/reporting tool is the most appropriate one for a Knowledge Valuation and Reporting Model such as described with the KnowVRM in the | |
|----|---------|-----------------------------------------------|---|--------|
| | | | | |
Appendix (Question No.4)?

a) Integrated in currently published financial statements;

b) Attached to currently published financial statements with reconciliation with the financial statements’ figures and information;

c) Supplementary information separated from currently published financial statements (similar to environmental, social and ethical reporting);

d) Do you have any other suggestions how to communicate such a Knowledge Valuation and Reporting Model? Please state:
<table>
<thead>
<tr>
<th>P13</th>
<th>The new model is regarded as useful by financial statements users. (⇒ financial statements users)</th>
<th>3.7.1.3</th>
<th>From your point of view, is the proposed model (KnowVRM) decision-useful, i.e. useful in assessing cash flow prospects and in assessing stewardship of a company?</th>
<th>2a</th>
<th>5.3.1.1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Why do you think that the model is decision-useful?</td>
<td>2b</td>
<td>5.3.1.1</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Do you think that the proposed model (KnowVRM) provides useful information about an entity’s economic resources, claims on those resources and changes in resources and claims as well as changes in resources and claims resulting from financial performance?</td>
<td>3a</td>
<td>5.3.1.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Why do you think that the model provides such useful information, i.e. information about an entity’s economic resources, claims on those resources and changes in resources and claims as well as changes in resources and claims resulting from financial performance?</td>
<td>3b</td>
<td>5.3.1.1</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>From your point of view, is the proposed</td>
<td>4a</td>
<td>5.3.1.1</td>
<td></td>
<td></td>
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<tr>
<td>Question</td>
<td>Code</td>
<td>Section</td>
<td></td>
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<tr>
<td>Why do you think is the proposed model (KnowVRM) relevant, i.e. improve the predictive and confirmatory value of financial information?</td>
<td>4b</td>
<td>5.3.1.1</td>
<td></td>
<td></td>
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<tr>
<td>Does the proposed model (KnowVRM) present faithfully (reliable) financial reporting information, i.e. the information is verifiable?</td>
<td>5a</td>
<td>5.3.1.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Why do you think it represents faithfully financial reporting information?</td>
<td>5b</td>
<td>5.3.1.1</td>
<td></td>
<td></td>
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<tr>
<td>Are there any constraints you might think about regarding the proposed model (KnowVRM) (e.g. cost vs. benefit)?</td>
<td>6a</td>
<td>5.3.2</td>
<td></td>
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<tr>
<td>Which constraints do you think about?</td>
<td>6b</td>
<td>5.3.2</td>
<td></td>
<td></td>
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<tr>
<td>What do you think are the benefits or cost prevailing in applying this proposed model (KnowVRM)?</td>
<td>7a</td>
<td>5.3.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Why do you think that the benefits/costs prevail(s)?</td>
<td>7b</td>
<td>5.3.2</td>
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<td>Page</td>
<td>Text</td>
<td>3.7.1.3</td>
<td>Question</td>
<td>Page 5.3.3</td>
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<tr>
<td>P15</td>
<td>The new model should be either integrated or closely associated with current financial statements, but not be fully separated from them. (financial statements users)</td>
<td>Where should the new model be placed in respect to financial reporting:</td>
<td>a) Integrated in the current published financial statements;</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>b) Attached to the current published financial statements with a reconciliation to the financial statements figures and information;</td>
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<td></td>
<td></td>
<td></td>
<td>c) Supplementary information separated from the current published financial statements (similar to environmental, social and ethical reporting);</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>d) Any other suggestions how to communicate such a Knowledge Valuation and Reporting Model? - Please state.</td>
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<td></td>
</tr>
<tr>
<td>P16</td>
<td>The new model improves current financial statements. (financial statements users)</td>
<td>Overall, do you think that the proposed Model KnowVRM would improve current financial statements?</td>
<td></td>
<td>9a</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.3.4</td>
<td></td>
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</table>
The reason for each proposition is explained in chapter 2. The reasons for the questions related to P6 and P10 - P16 are explained in the respective sections with chapter 3. The reasons for the questions related to P1 – P5 and P7 - P9 used in the interview guide are explained in the following:

**P1: Constituencies have a different understanding about the meaning of knowledge among each other and compared with the literature.**

As discussed in chapter 2, to date different terms are used in the literature for knowledge and intangibles and a widely accepted general positive definition of intangibles and knowledge is lacking (Gerpott et al., 2008; Kristandl and Bontis, 2007; Bontis, 2001; Moeller, 2009; Abeysekera, 2008a). Even the lack of a commonly accepted definition might negatively impact the development of the related research about knowledge and intangibles\(^\text{117}\) (Sveiby, 1997; Bontis et al., 1999; Andriessen, 2004a; Molbjerg-Jorgensen, 2006; Kristandl and Bontis, 2007; Yates-Mercer and Bawden, 2002), it is generally useful to understand how constituencies would define them and particularly relevant for this study to put answers from the constituencies into the right context. It appears from the literature review (see also chapter 2) that the literature is still in its infancies in this respect or as expressed by Kristandl and Bontis (2007), the literature in this field is in its embryonic stage yet. Therefore, it cannot be expected that the term knowledge is common sense and that all constituencies are aware of one common and clear definition. This makes it even more necessary and important to understand what the constituencies understand with regard to the term knowledge. It should give a better understanding of the previous answers and can put them in a better context. It might

\(^{117}\) For example, it is difficult to measure something what cannot be described and defined reasonably precisely as it is also discussed in chapter 2 (see also Boisot, 1998; Spender and Marr, 2006).
also be used to shape the (theoretical) definition of knowledge and intangibles as it is defined in the previous chapter.

**Q 6.1: What is the meaning of “knowledge” relating to biotech companies as you have used it before?**

Based on the answer to this question, the previous answers can be better interpreted. The question is raised to understand what the interviewees mean by the term “knowledge” as it is used throughout the interview by interviewer and interviewees.

**Q 6.2: Could you define “knowledge” in relation to biotech companies in one sentence?**

The purpose of this question is to obtain a short and as precise as possible definition of what the interviewees had in mind while being interviewed. It should be noted that the interviewees hold generally an academic degree and can also be deemed as experts in their respective fields. Even if the meaning of knowledge is explained in the previous question Q 6.1, it is useful to have their brief definition of what knowledge is from their point of view. By doing this, interviewees are forced to avoid general explanations and should precisely express what the core meaning of the term knowledge is for them. It is also more precise to have the interviewees’ own summary instead of summarizing it independently from them, as with the latter the risk to fail to interpret it correctly is possible.

**P2: Financial statements no longer fulfil their original purpose.**

**Q 1.1: What do you think is the principal purpose of financial statements?**

This question should provide insight into the different views of the interviewees about what they believe financial statements are generally used for beyond their own use. It should disregard the specific purpose of the financial statements for the interviewee, but seek to establish whether the interviewees have a general
understanding of why financial statements are generally prepared. It provides a wider context for the following more specific question.

**Q 1.2: What is the purpose of financial statements for you?**

Following the introductory question before, this question aims at obtaining insights about the interviewees’ use of financial statements.

**H3: Constituencies have a different understanding about reliability with regard to information within financial statements.**

As already indicated in the previous proposition and questions, reliable knowledge information might be a concern for constituencies which could be a reason why some constituencies, beside financial accounting standard bodies, also struggle to be in favor of knowledge valuation and reporting within current financial statements (Nielsen et al., 2006; FASB, 2001). Based on its own empirical research, the Office of the Australian Accounting Standards Boards found that reliability of measurement is a function of the inherent nature of intangibles and the availability of respective relevant data for each intangible item (Office of the Australian Accounting Standards Board, 2008)

To understand their concerns which they might have raised during the course of the interviews, it is necessary to understand what they mean by reliability in the context of current financial statements. It is not clear from the literature what constituencies’ understanding is regarding reliability particularly in respect to intangibles disclosures. But it could also provide insights into potential differences between the formal definition from accounting standard boards and the understanding constituencies who use financial statements.

**Q 6.3: What is the meaning of “reliability” for you in relation with reporting and valuing of “knowledge”?”**
Consistent to the proposition, this question is asked to understand the interviewees understanding of the term reliability in the context of knowledge valuation and reporting.

**P4: Constituencies already recognise, outside the financial statements and in different manners, the knowledge value within a company.**

**Q 4.1: How do you identify (manage) and evaluate “knowledge” in a (your) company?**

The question is aimed at revealing the way the constituencies use knowledge information in their decisions. Particularly of interest is the identification, management, which is only asked to the chief finance officers (CFOs) as it is only relevant for them, and the evaluation of the identified knowledge. If the constituencies identify and evaluate knowledge, it might indicate that they are also interested in it. It might also discover the details constituencies identify and evaluate this knowledge information based on their best practice. It provides also indication of what constituencies find as useful knowledge information.

**P5: Constituencies do not require that information in financial statements including information about knowledge is in accordance with the general financial accounting framework.**

As already indicated before, the question arises in the literature whether the current financial accounting framework is still adequate for companies which (fair market) values are increasingly driven by non-tangible assets and capabilities which have different characteristics than tangible assets (Stark, 2008; Skinner, 2008a). However, no evidence could be found that the current financial accounting framework should be abolished; there are only claims for changes in financial accounting standards by
many of those authors who support the view that intangibles are not adequately reflected by current financial accounting standards. But there is no proposal in the literature about whether new intangible accounting rules should be embedded and consistent with the current accounting framework or whether the financial accounting frameworks have to be revised if new accounting standards are introduced for intangibles. Through this proposition it will be validated whether this claim, particularly for knowledge, can be confirmed or not confirmed in respect to the principle financial accounting requirements as set out in the different accounting frameworks.

**Q 6.4: Please rank (by ticking) each of the following from 1 (very important) to 5 (not important):** For reliability of information and data in financial statements, how significant is for you (1) verifiability, (2) representation faithfulness, (3) neutrality, (4) comparability and (5) consistency of data and information within financial statements

The relating proposition is validated through this question. It focuses on the principal financial accounting sub-criteria of reliability. As Burgman and Roos states, criteria for the information content for intellectual capital reporting and disclosure are largely ignored today in related research (Burgman and Roos, 2007).

In a structured way, the interviewees are asked to give their feedback on this issue, irrespective of specific items such as knowledge, within financial statements. As a principal criterion, reliability is either applied on the whole financial statements or on no parts of them. Because of that, it can and needs to be asked independently to knowledge information within financial statements as the principal of reliability is generally in question.

**P7: Constituencies find it useful and do want to see the valuing and reporting of knowledge in financial statements.**

Many authors in the literature argue that constituencies would like to see more insight information about a company’s knowledge value (Holland, 2006; Lev et.al.,
Moreover, they argue in favor of revised financial accounting standards to allow financial statements preparers to include more information and values concerning the company’s knowledge base (Milost, 2007; Lev, 2001; Lev, 2008; Andriessen, 2004b; García-Ayuso, 2003; Alwert et al., 2009). However, financial accounting setters are still reluctant to change current rules as they believe that more information about intangibles are either not reliable, not comparable or not relevant (Stark, 2008; Skinner, 2008a; Arenas and Lavanderos, 2008; Abeysekera, 2008b; FASB, 2001).

**Q 3.1: What do you think about reporting of “knowledge” in financial statements of biotech companies?**

This question is raised to understand the constituencies’ views about additional information in financial statements concerning a company’s knowledge. It should give additional indication whether such knowledge reporting is useful from the constituencies’ point of view. The results are also used to verify the consistency of other answers.

**Q 3.2: Would it be (decision) useful – from your point of view – to publish information about “knowledge” in biotech companies in financial statements?**

This question tries to raise a similar issue as in Q 3.1, but from a different angle. It is also more precise with regard to the usefulness of this knowledge information. Comparing to Q 3.1, which is broader and more general, this question is aiming at the understanding of the constituencies, not only their general view on reporting of knowledge, but more specifically on the usefulness of such information. It might be that the respondents answer both questions in a similar way as they have already thought about the usefulness in the precedent question (Q 3.1), but it might also be the case that the respondents give additional and more specific information comparing to the previous one.
Q_3.3: Why would information about “knowledge” be useful/ not useful from your point of view?

Because the previous question was a rather closed question. It might be that several respondents gave already an explanation within the answer of the previous question (Q_3.2). However, if not and may be the respondents have not comprehensively answered to the previous question, through this question the reasons for their decision and view relating to Q_3.2 should be revealed.

Q_3.4: Do you think, reporting and valuing of knowledge would be considered useful by other constituencies (banks, investors, entrepreneurs) ?

The aim of this question is to abstract from the personal view of the interviewee who might have his personal view only in mind when he responds to the previous two questions (i.e. Q_3.2 and Q_3.1). The interviewees might not find valuing and reporting of knowledge in financial statements as useful because he/she has his/her own private channels (Holland, 2006), but he/she would find it useful in general and for others who have not that private channel to obtain that kind of information.

Q_3.5: Imagine knowledge could be valued and reported reliably in financial statements (i.e. in a perfect world), would financial statements be more useful from your point of view – and why?

As knowledge valuation and reporting is a new topic, interviewees could be very concerned as they do not know exactly what this means in practice. One particular issue is the reliability of such information which is also one of the reasons for the current standard setters such as the IASB not to allow knowledge valuation and reporting to a large extent in the current financial statements. To understand whether the interviewees find knowledge valuation and reporting generally useful, although they may have concerns about the reliability of such information, this question is introduced. If the interviewees confirm the usefulness in this hypothetical case that such information can be reliably presented, but they had concerns about such valuation and reporting in the preceding questions, it might be effectively the result
of the interviewees concern about the reliability of such information as they cannot imagine how knowledge could be valued and reported appropriately.

**Q 3.6: Do you think, financial statements would be considered more useful by other constituencies, if knowledge could be valued and reported reliably?**

This question is introduced to verify whether the previous questions are influenced by the personal access of the interviewees to such information. It should abstract from the personal view of the interviewees who might have private information channels. It is the corresponding question to Q 3.4 for the hypothetical case that knowledge could be valued and reported reliably.

**P8: Constituencies do recognise the main characteristics in the biotech industry, although they are not valued and appropriately reported in financial statements.**

**Q 2.1.1: What do you think are the main characteristics of the biotech industry (e.g. compared to oil or steel industry)?**

The purpose of this question is to understand whether constituencies observe differences in the characteristics of the biotech-industry comparing to other industries and what those differences are as well as to verify whether the interviewees have the industry knowledge to assess biotech-company businesses reasonably.

**Q 2.1.2: What are the main value drivers of biotech companies?**

This question clarifies the preceding question. It asks the interviewees about their understanding of the specific value drivers within the biotech industry. It should reveal the drivers of revenues and value of biotech companies, but at the same time it should also provide insights about the components, which may be relevant for investors, and also give an understanding of whether and in what manner such value drivers are considered by financial statements users in current financial statements.
P9: Constituencies do need more and different information than that in financial statements to make better decisions.

Q 2.2: What do you think has to be changed in financial statements of biotech companies, i.e. included or not included in these financial statements, so that these financial statements fulfill their principal purpose?

Although this question assumes that current financial statements might have to be changed in order to fulfill the original purpose, it gives the respondent the freedom to state whether or not anything has to be changed and if any, what should be changed. The question asks for a general reflection, i.e. not specifically for any user, neither for the respondent nor for someone else, in opposite to the following questions.

Q 2.3: What do you think has to be changed in financial statements of biotech companies so that you can better make decisions based on these financial statements?

This question is raised to clarify whether the respondent has answered Q 2.2, the aforementioned question, with his/her person or other financial statements users in mind. For example, if the respondent suggests some changes in general consistent to Q 2.2, he/ she might not suggest such changes if he/she is directly concerned. The reason for it relates to a certain extent to the principle-agent-theory, where respondents who are personally concerned argue and act differently to those who only represent those people.
Appendix II – Background of the author

After having studied international management at the International Business School in Lippstadt as well as business, economics and mathematics at the FernUniverstät Hagen (Open University in Hagen/ Germany) Sven started his professional career as audit junior at KPMG in Düsseldorf/ Germany in October 1999.

In January 2001, Sven moved as audit senior to KPMG Hamburg/ Germany. One of his main activities was auditing and advising clients relating to International Financial Reporting Standards (IFRS) and US-GAAP. He was part of the so called German Capital Market Group that was dedicated to financial statements audits and special advisory projects related to publicly traded companies preparing their external financial reporting either under IFRS or US-GAAP accounting rules. The latter group of companies included several small and mid-cap companies of which several were referred to as “high-tech companies”, i.e. companies that were closely related to research activities and that tried to develop new products and services based on most promising research results. Some of these high-tech companies had their headquarters in Hamburg. At that time, Sven also advised the largest German telecom company Deutsche Telecom in the transition to IFRS and US-GAAP, in particular relating to intangibles related accounting and disclosures.

In November 2001, Sven passed the exam of the American Certified Public Accountant (CPA). He is licensed in Washington State/ USA as CPA (equivalent to Chartered Accountant). In addition, he is also Fellow Chartered Certified Accountant (FCCA) of the Association of Chartered Certified Accountants (ACCA).

In October 2004, Sven moved to KPMG Luxembourg as audit assistant manager and became audit manager in October 2005. He continued working on special audit and advisory engagements related to IFRS and US-GAAP. In addition to the non-financial industry on which he focused in the past, he also looked after the financial industry with regard to IFRS and US-GAAP related issues.

In December 2007, Sven moved into the advisory function of KPMG Luxembourg to build up the Financial Risk Management practice. Services developed within this new department relate to specific IFRS and US-GAAP accounting issues, valuation, risk management and risk modeling. Due to the various specializations, he is
involved as specialist in a large number of audit engagements of KPMG Luxembourg. He became Director of KPMG in October 2010 and Partner in October 2012.

Sven is also member of various industry groups and associations in Luxembourg. The largest of them is the Association of the Luxembourg Fund Industry (ALFI\textsuperscript{118}).

\textsuperscript{118} The Luxembourg fund industry is also the second largest in the world, only behind the USA (refer to statistics at www.ALFI.lu or www.ICI.org).
Appendix III – Questionnaire for interviews relating to section 4.2

Questionnaire

Q_1.1: What do you think is the principal purpose of Financial Statements?

Q_1.2: What is the purpose of Financial Statements for you?

Q_2.1.1: What do you think are the main characteristics of the Biotech-Industry (e.g. compared to Oil or Steel Industry)?

Q_2.1.2: What are the main value drivers of Biotech companies?
Q_2.2: What do you think has to be changed in Financial Statements of Biotech companies, i.e. included or not included in these Financial Statements, so that these Financial Statements fulfill their principal purpose?

Q_2.3: What do you think has to be changed in Financial Statements of Biotech companies so that you can better make decisions based on these Financial Statements?

Q_3.1: What do you think about reporting of “knowledge” in Financial Statements of Biotech companies?
Q. 3.2: Would it be (decision) useful – from your point of view – to publish information about “knowledge” in Biotech companies in Financial Statements?

Q. 3.3: Why would information about “knowledge” be useful/ not useful from your point of view?

Q. 3.4: Do you think, reporting and valuing of knowledge would be considered useful by other constituencies (banks, investors, entrepreneurs)?

Q. 3.5: Imagine Knowledge could be valued and reported reliably in Financial Statements (i.e. in a perfect world), would Financial Statements be more useful from your point of view – and why?
Q_3.6: Do you think, Financial Statements would be considered more useful by other constituencies, if knowledge could be valued and reported reliably?

Q_4.1: How do you identify (manage) and evaluate “knowledge” in a (your) company?

Q_5.1: What would have to be ensured principally from your point of view so that “knowledge” could be reported and valued reliably in Financial Statements?
Q_6.1: What is the meaning of “knowledge” relating to Biotech companies as you have used it before?

Q_6.2: Could you define “knowledge” in relation with Biotech companies in one sentence?

Q_6.3: What is the meaning of “reliability” for you in relation with reporting and valuing of “knowledge”?

Q_6.4: Please rank (by ticking) each the following from 1 (very important) to 5 (not important):
For reliability of information and data in Financial Statements, how significant is for you …

1) verifiability of these data and information  
2) representation faithfulness of these data and information  
3) neutrality of these data and information  
4) comparability of these data and information  
5) consistency of these data and information
Appendix IV – Questionnaire for interviews relating to section 4.3

Questionnaire

Q.4.2: What kind of information, do you think, should be included in a potential knowledge (valuation & reporting) model?

- PLEASE RANK THE FOLLOWING (NO. 1-22 AND 23 IF APPLICABLE) FROM 1 (VERY IMPORTANT) TO 5 (NOT IMPORTANT) BY TICKING/ CIRCLING/ BOXING THE NUMBER YOU HAVE CHOSEN;

- FOR EACH OF NO. 1 – 22 THAT HAS NOT BEEN RATED BY 5, GO TO THE EQUIVALENT SUBHEADINGS (a), b), ...) AND RANK THEM IN ORDER OF IMPORTANCE (1 BEING MOST IMPORTANT AND 5 THE LEAST AND 5 THE LEAST IMPORTANT).

Information about …

Example

1. Reputation

   a) Statements of customers’ views about company’s reputation

   b) Image of company at customers and non-customers

   c) Other please state

   _________________
   _________________
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2. Contracts (legal enforceable contractual arrangements)
### 1. Sales

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<td>a) Sales value per year of revenue/sales contracts</td>
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<td>b) Total value of commitments from contracts</td>
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<td>c) Principal description of main contracts</td>
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<td>d) Other please state</td>
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### 2. Commitments

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### 3. Intellectual property (copyrights, trademarks, patents, brands, etc.)

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<td>a) Numbers of copyrights, trademarks, patents, brands, etc.</td>
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<td>b) Numbers of patents per employee</td>
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<td>c) Numbers of copyrights per employee, etc.</td>
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<tr>
<td>d) Value of copyrights, trademarks, patents, brands, etc.</td>
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<tr>
<td>e) Cost of patent maintenance</td>
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<td>f) Other please state</td>
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### 4. Customers

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</table>
a) Ratio of sales to customers 1 2 3 4 5
b) Customer attitudes and satisfaction 1 2 3 4 5
c) Amount of customer complaints and product returns 1 2 3 4 5
d) Number of alliances, partnerships or business Collaborations and their value 1 2 3 4 5
e) Revenue and profit per customer 1 2 3 4 5
f) Other please state

5. Locations (property rights, real estates, etc.) 1 2 3 4 5
a) Square meters of business locations owned and/or rented 1 2 3 4 5
b) Total amount of rents to be paid 1 2 3 4 5
c) Total amount of depreciation on buildings, real estates, etc. 1 2 3 4 5
d) Average cost per square meter rented or owned 1 2 3 4 5
e) Location of main sites 1 2 3 4 5
f) Other please state

_____________________________ 1 2 3 4 5
_____________________________ 1 2 3 4 5
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_____________________________ 1 2 3 4 5
6. Markets (trade marks, brands, labels, company logos, life-cycle of products, marketing strategies)

   a) Amount of new product introductions
   b) Product life-cycle cost per Euro of sales
   c) Product life-cycle trend and description of each (main) product life-cycle
   d) Average length of time for product design
   e) Expected total revenue and gain/loss per product line
   f) Other please state

7. (Infra-) Structure assets (such as corporate culture, management style & philosophy, management processes, information & network systems, R&D, structural/organizational capital and other remaining intellectual assets, going-concern value elements – different business elements are physically and functionally assembled which create value, existence of excess economic value, expectation of future events that are not directly related to the current operation of the business)

   a) The ratio of new ideas generated to new ideas implemented and the value of new ideas (money saved, money earned)
   b) Number of multi-functional project teams
<table>
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<tr>
<th></th>
<th>Proportion of income from new product introductions</th>
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<th>2</th>
<th>3</th>
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<td>d)</td>
<td>Five year trend of product life cycle</td>
<td>1</td>
<td>2</td>
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<td>e)</td>
<td>Average length of time for production design and development</td>
<td>1</td>
<td>2</td>
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<td>f)</td>
<td>Revenue and income generated per R&amp;D expense</td>
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<td>2</td>
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<td>g)</td>
<td>Investments in organizational structure</td>
<td>1</td>
<td>2</td>
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<td>h)</td>
<td>Other please state</td>
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8.(Production) Processes

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<th>Cost per process</th>
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<td>b)</td>
<td>Number of employees split up on different processes</td>
<td>1</td>
<td>2</td>
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<td>c)</td>
<td>Rate of turnover</td>
<td>1</td>
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<td>d)</td>
<td>Lead time for product development</td>
<td>1</td>
<td>2</td>
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<td>e)</td>
<td>Acclimatization time for new organizational units wastage in %</td>
<td>1</td>
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<td>f)</td>
<td>Waiting time</td>
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<td>g)</td>
<td>Quality</td>
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<td>h)</td>
<td>Other please state</td>
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9. Data processing & technology (electronic database, computer software, hard and software used, etc.) 1 2 3 4 5

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<tr>
<td>a)</td>
<td>Ratios of Information Systems expense to total revenue and income</td>
<td>1</td>
<td>2</td>
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<td>b)</td>
<td>Number and kind of software licenses</td>
<td>1</td>
<td>2</td>
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<tr>
<td>c)</td>
<td>Volume of information systems (IS) use and connections</td>
<td>1</td>
<td>2</td>
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<tr>
<td>d)</td>
<td>The number of times the data base has been consulted/ is accessed</td>
<td>1</td>
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<tr>
<td>e)</td>
<td>Contribution to and upgrades of the database</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>f)</td>
<td>Satisfaction with IS service</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>g)</td>
<td>Total IT investments</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>h)</td>
<td>Number of PCs per employee</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>i)</td>
<td>Soft- and hardware costs per employee</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

j) Other please state

<p>| | | | | |</p>
<table>
<thead>
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</tbody>
</table>

10. Human capital (company’s assembled workforce, i.e. employee contracts, staff and management know how, staff and
management experience, etc.) | 1 | 2 | 3 | 4 | 5
---|---|---|---|---|---
a) Years of experience in profession; Expert and admin. staff seniority (in years) | 1 | 2 | 3 | 4 | 5
b) Cost per hire | 1 | 2 | 3 | 4 | 5
c) Employee satisfaction, motivation and attitude | 1 | 2 | 3 | 4 | 5
d) Expert and admin. staff turnover rate | 1 | 2 | 3 | 4 | 5
e) Total training costs divided by costs per employee | 1 | 2 | 3 | 4 | 5
f) Percentage of employees (and management) with degrees | 1 | 2 | 3 | 4 | 5
g) Ratio of managers to employees | 1 | 2 | 3 | 4 | 5
h) Amounts of innovations per employee | 1 | 2 | 3 | 4 | 5
i) Value added per employee and/or per expert | 1 | 2 | 3 | 4 | 5
j) Age structure | 1 | 2 | 3 | 4 | 5
k) Percentage of employees with plan for development | 1 | 2 | 3 | 4 | 5
l) Training days per employee | 1 | 2 | 3 | 4 | 5
m) Education level and vocational qualification | 1 | 2 | 3 | 4 | 5
n) Reputation of company employees with head hunters | 1 | 2 | 3 | 4 | 5
o) Rookie ratio (percent of employees with less than two years experience) | 1 | 2 | 3 | 4 | 5
p) Other please state

______________________________ | 1 | 2 | 3 | 4 | 5
______________________________ | 1 | 2 | 3 | 4 | 5
______________________________ | 1 | 2 | 3 | 4 | 5
11. Company’s value chain (and its intangible assets (= intellectual capital) linked to its strategy) and a description of how the company manage it (supported by, e.g., key performance indicators)

12. Company’s knowledge linked to its corporate activities and systems for the measurement and valuation of intangibles.

13. How a company plans to achieve its strategic objectives by its intellectual capital (IC) (i.e. objectives & strategies linked to different intellectual assets/ components of IC and linked to company’s prospective financial budget)

14. How a company manage its intellectual capital, e.g. by the "Balance-Score-Card" (BSC)

15. Different ratios and/or performance indicators linked to company’s strategies and objectives

16. Value of intangible assets by the “Value Added Intellectual Coefficient” (VAIC); it indicates corporate value creation efficiency. The higher the VAIC coefficient, the better management has utilized the company’s potential. VAIC should monitor and measure the value creation efficiency in the company according to accounting based figures.

17. Monetary value of individual employees and/or groups of employees such as:

- directors

- officers
measured by

- historical cost approach
- replacement cost approach
- net realizable value (market value) approach
- current cost approach
- expected (discounted) future cash flow approach
- (real) option price theory
- economic profit (income approach)
- Other please state

18. Value of human intangible assets by the treatment of employees as an “asset, which a company has to lease” (akin to equipment financial lease) and therefore the leasing commitment would be capitalized on the balance sheet similar to “debt finance assets”.

19. Value of intangible assets by different (other) ratios such as:

a) “Market-to-Book Ratio” (market prices
divided by book value of company)  1  2  3  4  5

b) “Residual Value Approach” (derived from the market value of the company by deducting any identifiable tangible and intangible asset from market price of company)  1  2  3  4  5

c) “ROA” (= company’s average annual excess Earnings over three to five years divided by average cost of capital)  1  2  3  4  5

d) “Market Capitalization Method (MCM)” (It assumes that excess of a company’s market capitalization over its stockholders’ equity is its intellectual capital.)  1  2  3  4  5

20. Value of intangible assets by establishing of a “Statement of Investments in the Future”, which buffers the expenses in intangible assets for a period of 3 to 5 years, until they prove to be either expenses (and consequently are charged to the income statement) or investment (and therefore activated as assets on the balance sheet).  1  2  3  4  5

21. Value of intangible assets by the “Direct Intellectual Capital” (DIC) method:
This focuses on measuring the value of intellectual capital (IC) by first identifying its various components and then directly evaluating them. Components of IC [such as market assets (such as customer loyalty), Intellectual Property (such as patents), technology assets (such as know-how), human assets (such as education and training), and structural assets (such as information systems)] are all measured and then the total value of company’s IC can be derived.  1  2  3  4  5

22. Value of intangible assets by the “Financial method of intangible assets measurement” (FiMIAM) method. This measure is calculated as follows:
Step 1: determining the “realized intellectual capital” The difference between the book value and the market value may be defined as the “realized intellectual capital”.
Step 2: identifying the relevant components of IC
Step 3: assigning relative weights to IC components
Step 4: justification of the coefficients
Step 5: assigning value
Step 6: Finally a new “market bottom line” is created by adding these IC values to the firms book value

23. Are there any other information and/or indicators you feel would be useful?

__________________________________________

__________________________________________

__________________________________________

__________________________________________

Q_4.3: Please Rank the three most important models from No. 1-23 (of Q_4.2) above in order of their importance!

1. ____________________________

2. ____________________________

3. ____________________________

Q_4.4: Why have you chosen these Models?

__________________________________________

__________________________________________

__________________________________________

__________________________________________
Appendix V – Questionnaire for interviews with constituencies relating to section 6.2

Questionnaire

Knowledge Valuation and Reporting Model (KnowVRM)
1) Please give a brief description of the model in your own words and based on your understanding.

……………………………………………………………………………………………
……………………………………………………………………………………………

2a) From your point of view, is the proposed model (KnowVRM) decision-useful, i.e. useful in assessing cash flow prospects and in assessing stewardship of a company?

……………………………………………………………………………………………
……………………………………………………………………………………………

2b) Why do you think that the model is decision-useful?

……………………………………………………………………………………………
……………………………………………………………………………………………

3a) Do you think that the proposed model (KnowVRM) provides useful information about an entity's economic resources, claims on those resources and changes in resources and claims as well as changes in resources and claims resulting from financial performance?

……………………………………………………………………………………………
……………………………………………………………………………………………

3b) Why do you think that the model provides such useful information, i.e. information about an entity's economic resources, claims on those resources and changes in resources and claims as well as changes in resources and claims resulting from financial performance?

……………………………………………………………………………………………
……………………………………………………………………………………………

4a) From your point of view, is the proposed model (KnowVRM) relevant, i.e. does the model improve the predictive and confirmatory value of financial information?

……………………………………………………………………………………………
……………………………………………………………………………………………

4b) Why do you think is the proposed model (KnowVRM) relevant, i.e. improve the predictive and confirmatory value of financial information?

……………………………………………………………………………………………
……………………………………………………………………………………………
5a) Does the proposed model (KnowVRM) present faithfully (reliable) financial reporting information, i.e. the information are verifiable?

5b) Why do you think it represents faithfully financial reporting information?

6a) Are there any constrains you might think about regarding the proposed model (KnowVRM) (e.g. cost vs. benefit)?

6b) Which constrains do you think about?

7a) What do you think, are the benefits or cost prevailing in applying this proposed model (KnowVRM)?

7b) Why do you think that the benefits/cost prevail(s)?

7c) Where should the new model be placed in respect to financial reporting:
   a) Integrated in the current published financial statements;
   b) Attached to the current published financial statements with a reconciliation to the financial statements figures and information;
   c) Supplementary information separated from the current published financial statements (similar to environmental, social and ethical reporting);
   d) Any other suggestions how to communicate such a Knowledge Valuation and Reporting Model? - Please state.
8a) Overall, do you think that the proposed Model KnowVRM would improve current financial statements?

........................................................................................................................................
........................................................................................................................................

8b) Why do you think that the proposed model improves financial statements?

........................................................................................................................................
........................................................................................................................................

Thank you very much for taking time for this interview and your support!
Appendix VI – Questionnaire for interview with R.K. relating to section 6.2

Questionnaire

Knowledge Valuation and Reporting Model (KnowVRM)
1) Suppose a Knowledge Valuation and Reporting Model would exist. What would you prefer as communication/reporting tool? (Please refer to pager 1 of the Appendix I – Knowledge Valuation and Reporting Model (KnowVRM) description – for a definition of “knowledge”)

b) Integrated in the current published financial statements;

c) Attached to the current published financial statements with a reconciliation to the financial statements figures and information;

d) Supplementary information separated from the current published financial statements (similar to environmental, social and ethical reporting);

e) Do you have any other suggestions how to communicate such a Knowledge Valuation and Reporting Model? Please state:

2) Do you think such a Knowledge Valuation and Reporting Model should be audited or reviewed by an independent accountant?

3) What level of reliability would you prefer?
   o Reasonable assurance based on an audit;
   o Moderate level of assurance (negative assurance) based on a review;
   o Consistency with other audited financial statements information;
   o No assurance.

4) What do you think about the enclosed Knowledge Valuation and Reporting Model (termed “KnowVRM”)? (please see Appendix I for the respective model description)

5) What do you think now after becoming acquainted with the KnowVRM from above (Question No. 4):
   Which communication/reporting tool is the most appropriate one for a Knowledge Valuation and Reporting Model such as described with the KnowVRM in the Appendix (Question No.4)?
   a. Integrated in the current published financial statements;
   b) Attached to the current published financial statements with a reconciliation to the financial statements figures and information;
   c) Supplementary information separated from the current published financial statements (similar to environmental, social and ethical reporting);
d) Do you have any other suggestions how to communicate such a Knowledge Valuation and Reporting Model? Please state:

Thank you very much for taking time for this interview and your support!
Appendix VII – Attachments to questionnaires (constituencies & R.K.)

The Purpose of this Paper is to discuss a new knowledge valuation and reporting model as described in the following:

**Introduction:**

In the following the term “**knowledge**” is defined as the capacity to act on information and thereby making it valuable. It comprises any kind of intellectual capital and goes far beyond the definition of intangible assets recognized in the financial statements (e.g. according to IAS 38).

The following figure provides an overview about the term **knowledge** and how it relates to other similar terms used in theory and practice:

The main objective of this Knowledge Valuation and Reporting model ("**KnowVRM**") as described below is to provide the financial statements users with information and explanations about:
o what are the most valuable and important knowledge resources of the company;

o where do the knowledge values come from within the company;

o consistency of the strategies, forecasted budgets and actual financial results to the use and exploitation of knowledge resources of the company.
The **KnowVRM** is set up in several different steps. They can be separated into two broad areas:

(3) valuation and presentation of the results on the face of the balance sheet (steps 1-8) and

(4) additional explanatory information to be disclosed in the notes (steps 10-18)

In brief, the **KnowVRM** model comprises the following general procedures:

(a) Identify and (re-)value every intangible asset on a stand-alone basis
(b) Revalue every tangible asset and liability on a stand-alone basis
(c) Value the company as a whole
(d) Take the difference of (c) and the company’s book value (= carrying value of equity), deduct the results from (a) and (b) and allocate the remaining difference on a reasonable basis and management’s best estimate to the intangible and tangible assets as well as liabilities. The differences allocated to intangible and tangible assets as well as liabilities are named as “portion of value of intangible assets/ tangible assets/ liabilities dependent on the company as a whole”. Any potential remaining amount will be presented under ‘firm’s remaining fair value not distributable to any identifiable asset or liability’

For all these values and steps extensive discussions are expected to be made in the notes.
Description of the KnowVRM – Valuation and Presentation (1. part):

Valuation and Presentation

1. Step (Identification of different knowledge assets):

Identify, as far as possible, all knowledge assets (including, inter alia, specific knowledge of the company and the employees as well as human and company’s potential) of and within a company. There are two types of knowledge assets: those which are already recognized as intangible assets (e.g. in accordance with IAS 38), and those which are not yet recognized and need to be identified; Examples of knowledge assets (= recognized and not yet recognized potential future intangible assets to be recognized in accordance with the KnowVRM) are:

- Contract Intangible Assets (represents value to that broad category of rights as a result of a written, legally enforceable contractual arrangement; examples are: franchise rights, service agreements, licensing rights, employment contracts, noncompete agreements, etc.)
- Copyright Intangible Assets
- Customer Intangible Assets (e.g. customer lists, customer relationships, etc.)
- Data Processing Intangible Assets (e.g. computer software, electronic databases, multimedia works, web-pages, etc.)
- Human Capital Intangible Assets (e.g. company’s assembled workforce and contracts with employees such as employment contracts, personality and other entertainment industry contracts, sports player contracts, covenants not to compete and noncompete agreements for individual employees, etc.)
- Location Intangible Assets (e.g. the value to be at one specific place, right to use a specific building/location, etc.)
- Marketing Intangible Assets (e.g. trademarks, brands, company logos, marketing strategy and promotion concepts, design of labels or packages, trade dress, trademark registrations, shelf space, etc.)
• Technology Intangible Assets (e.g. patents, patentable inventions, mask works, trade secrets, know how, confidential information, etc.)
• Goodwill Intangible Assets (e.g. going concern, excess economic income, future events, professional practice goodwill, etc.)

2. Step (Valuation of each single identified knowledge asset at fair value):

Value each intangible component identified in step 1 separately (including all intangibles already recognized in the financial statements) at fair value on a stand-alone-basis based on the company’s best understanding and view.

→ Appropriate and modern valuation models should be used and applied consistently over the periods (e.g. Discounted Cash Flow (DCF) Models or for more uncertain positions such as specific knowledge and research activities, real options could be applied).

3. Step (Recognition of revaluation results for the knowledge assets as calculated at step 2):

Compare the values determined for any single identified knowledge asset with its respective carrying amount within the balance sheet.

The respective differences should be recognized in a ‘preliminary modified balance sheet (1)’.

The differences are either
• added to the current intangible assets, which are already recognized, by a new separate line item referred to as ‘addition from revaluation of ... [name of the respective identified knowledge asset: e.g. licenses, patents, etc.]’ to the respective recognized intangible asset – as far as applicable – or
• results in a new knowledge asset to be recognized and shown by a new line item for each single identified knowledge asset referred to as ‘addition from valuation
of … [name of identified knowledge asset: e.g. customer list, trademarks, etc.]’ with its ‘only’ value as determined under step 2.

The counter entry is recognized in a special line item within the equity which is referred to as ‘(re-)valuation portion of knowledge assets separately identifiable’

In accounting terms, each difference of the identified knowledge asset is **debited** as a separate line item of the respective knowledge asset presented as ‘addition from (re-)valuation of … [name of the respective identified knowledge asset]’ – as identified under step 1 – and **credited** in equity in a special line item referred to as ‘(re-)valuation portion of knowledge assets separately identifiable’.

4. Step (Revaluation of other tangible assets and liabilities already recognized in the current balance sheet):

Value each tangible asset and liability at fair value on a stand-alone-basis based on the company’s best understanding and view.

→ Appropriate and modern valuation models should be used and applied consistently over the periods (e.g. Discounted Cash Flow (DCF) Models or for more uncertain positions real options could be applied).

→ To simplify this task, the valuation report of the company as a whole from step 6 (see below) could be used for example.

5. Step (Recognition of revaluation results for the tangible assets and liabilities as calculated at step 4, which are already recognized in the current balance sheet):

Compare the values determined for any single tangible asset and liability with its carrying amount within the balance sheet.
The respective differences should be recognized in a ‘preliminary modified balance sheet (2)’, which is the preliminary modified balance sheet (1) plus the respective differences for those tangible assets and liabilities.

The differences are

- added to the current tangible assets by a separate line item referred to as ‘addition [or reduction, if applicable] from revaluation of ... (name of respective tangible asset/ liability]’ to the respective tangible asset/ liability.

The counter entry is recognized in a special line item within the equity which is referred to as ‘revaluation portion of tangible assets and liabilities separately identifiable’

In accounting terms, each difference of the tangible assets/ liabilities is debited (credited, if applicable) as a separate line item of the respective tangible asset/ liability presented as ‘addition [or deduction, if applicable] from (re-)valuation of ... [name of the respective tangible asset/ liability]’ and credited (debited, if applicable) in equity in a special line item referred to as ‘revaluation portion of tangible assets/ liabilities separately identifiable’.

6. Step (valuation of the company as a whole):

Value the company as a whole based on an appropriate and modern valuation model which uses future cash flow streams as an ingredient (e.g. DCF or option price theory); apply it consistently over the periods. By doing that, any hidden reserves and burden embedded in the current (tangible and intangible) assets are recognized.

The company’s forecasting budget should be consistent to this valuation (as most of the current valuation techniques are future orientated).

7. Step (allocation of the difference between the fair value of the company as a whole and the carrying amount of the total equity of the ‘preliminary modified
Balance sheet (2)’ to the identified and non-identified knowledge assets as well as to all other tangible assets and liabilities

Compare the FV of the company, as calculated in step 6), with the carrying value of the equity from the preliminary modified balance sheet (2) (see also step 5).

Use the difference and allocate it to (as far as applicable):
1) knowledge assets identified under step 1),
2) other non separately identifiable knowledge assets (which should be rare),
3) tangible assets (to recognize any (additional) hidden reserves and potential burdens),
4) liabilities (to recognize any additional hidden burdens),
5) a residual item as the firm’s remaining fair value not distributable to any asset or liability from above referring to as ‘overall company structure related knowledge and tangible assets as well as liabilities dependent on the company as a whole’ (e.g. non identifiable potential within the firm, etc.) (should normally be low in amount and rare in occurrence).

The allocation should be based on management’s best estimate of the weight of each component and should also be consistent to the valuation of the company made in step 6.

Apply the estimated allocation procedure consistently over the periods. (the allocation could be made, e.g., similar to that of the FiMIAM model, as described in principal in Appendix II)

8. Step (recognition and presentation of the non-identified knowledge assets, tangible assets and liabilities as calculated at step 7):

The respective amounts calculated under step 7) [ad 1) to ad 5) above] should be shown
for knowledge assets already identified (step 1) and valued (step 2) as well as recognized in the preliminary modified balance sheet (1) [ad 1]:
for each identified knowledge asset as ‘addition [or reduction, if applicable] from company structure related ... [name of knowledge asset] dependent on the company as a whole’ (structure related value of each knowledge asset or – knowledge assets linked to the company as a whole). That is in opposite to the knowledge assets already valued on a single basis which should be shown as knowledge assets individually valuable (refer to step 1-3).

for the knowledge assets which were not identified under 1) and not recognized at step 3) but identified and valued at step 7) [ad 2]:
as ‘addition to [or reduction, if applicable] from company structure related ... [name of knowledge asset] solely dependent on the company as a whole’

For every other tangible assets [ad 3]:
as ‘addition [or reduction, if applicable] from company structure related ... [name of tangible asset] dependent on the company as a whole’

For every other liabilities [ad 4]:
as ‘addition [or reduction, if applicable] from company structure related ... [name of liability] dependent on the company as a whole’

For asset(s) dependent on the company as a whole (primarily knowledge assets are expected) [ad 5]:
as one line item referring to as ‘addition [or reduction, if applicable] from company structure related residual value dependent on the company as a whole’

The counter entries are recognized in a special line item within the equity which is referred to as ‘revaluation portion of company structure related ... [knowledge assets, tangible assets, liabilities and/ or “value”, if applicable] dependent on the company as a whole’.

please note that four new line items within the equity section could arise from this exercise, one for each principal class: (1) knowledge assets, (2) tangible assets, (3) liabilities, (4) “value” as a residual from the allocation of the company’s fair value)
The preliminary modified balance sheet (2) plus the recognition of the amounts from above of the non-identified knowledge and tangible assets as well as liabilities calculated under step 7 result in a modified balance sheet (3).

In accounting terms, each difference identified above is

**debited (credited – if applicable)**

as a separate line item of the respective knowledge assets, tangible assets and/or liabilities presented as addition (or deduction, if applicable) of ‘*company structure related ... [name of knowledge asset, tangible asset and/or liability; or “value”, if applicable] or contingency dependent on the company as a whole*’ and

**credited (debited – if applicable)**

in equity in a special line item referred to as ‘*company structure related ... [knowledge assets, tangible assets, liabilities and/or “value”, if applicable] dependent on the company as a whole*’.
Summary of steps 1-8:

Balance Sheet (in accordance with current accounting standards)

Preliminary Modified Balance Sheet (1) (step 3)

Preliminary Modified Balance Sheet (2) (step 5)

Modified Balance Sheet (3) (step 8)

Full Fair Value Balance Sheet

An example of a revised balance sheet is also presented in the following:

<table>
<thead>
<tr>
<th>BALANCE SHEET as of Year End</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity</td>
<td></td>
</tr>
<tr>
<td>Equity Share Capital</td>
<td>120</td>
</tr>
<tr>
<td>Share Premium</td>
<td>70</td>
</tr>
<tr>
<td>Retained Earnings (incl. P&amp;L of year end)</td>
<td>95</td>
</tr>
<tr>
<td>Revaluation Reserves for tangible assets (net of 30% tax)</td>
<td></td>
</tr>
<tr>
<td>revaluation portion of knowledge assets separately identifiable</td>
<td>217</td>
</tr>
<tr>
<td>revaluation portion of company structure related knowledge assets dependent on the company as a whole</td>
<td>28</td>
</tr>
<tr>
<td>Revaluation reserves for tangible assets (and liabilities) (net of 30% tax)</td>
<td></td>
</tr>
<tr>
<td>Revaluation portion of tangible assets (and liabilities) separately identifiable</td>
<td>14</td>
</tr>
<tr>
<td>whole</td>
<td>7</td>
</tr>
<tr>
<td>Revaluation reserve for company structure related residual value (net of 30% tax)</td>
<td></td>
</tr>
<tr>
<td>Revaluation portion of company structure related residual value dependent on the company as a whole (residual from valuation of the company at fair value)</td>
<td>7</td>
</tr>
</tbody>
</table>

| Additions from company structure related residual value dependent on the company as a whole (residual from valuation of the company at fair value) | 190  |
| Knowledge assets |   |
| Addition from valuation of knowledge assets (separately identifiable) | 310  |
| company as a whole | 40  |
| Intangible assets (knowledge assets already recognized) | 275  |
| PP&E (at cost) | 487  |
| Addition from revaluation of PP&E at fair value | 20  |
| Addition from company structure related PP&E dependent on the company as a whole | 52  |
| Investments in Securities | 180  |
| Deferred Tax | 26  |
| Accounts Receivable | 391  |
| Other receivables | 56  |
| cash & cash equivalents | 113  |
| Loans | 560  |
| Deferred Tax | 140  |
| Accounts Payable | 290  |
| Other Liabilities | 52  |
| Provisions | 56  |
| Bank Overdraft | 44  |

1724 1724
A more detailed and another Example of a revised balance sheet which includes the results from the KnowVRM is shown in Appendix III and IV.

**Description of the KnowVRM – Disclosures (2. part):**

**Disclosures**


Presentation of a comprehensive reconciliation from the fair value of the company according to the valuation report and the book value of it by allocating the difference to the

- ‘revaluation portion of knowledge assets separately identifiable’,
- ‘revaluation portion of tangible assets and liabilities separately identifiable’ and
- ‘revaluation portion of knowledge assets unseparately linked to the company as a whole’.
- ‘revaluation portion of tangible assets and liabilities dependent on the company as a whole’.
- ‘revaluation portion of company structure related (residual) value dependent on the company as a whole’

**10. Step (Movement Schedule for equity from prior period to the current period, particularly for the revaluation reserves)**

A movement schedule, particularly for the revaluation reserve, could be presented as follows:
Explanations should be provided for the most significant movements of items within the schedule.

11. Step (Extensive Discussion for each significant identified stand-alone and linked knowledge asset in the notes):

In addition, each significant knowledge asset value, the stand alone part and the part linked to the company’s overall value should be extensively described (why these identified knowledge assets, how the linked part is interrelated to the company, what are the value drivers and assumptions resulting in the value of that knowledge asset, what are the expected cash flows from each knowledge asset, etc.)

12. Step (Brief Discussion for each significantly revalued stand-alone tangible asset and liability as well as for the respective revaluation portion of each tangible asset and liability linked to the company’s overall value in the notes):

Each tangible asset and liability, which were significantly revalued, should be extensively described (why the significant revaluation of this tangible asset and/or liability, how the linked part is interrelated to the company, etc.)

13. Step (notes presentation of valuation report including the fair values for each identified intangible asset, tangible asset and liability):
A summery of all significant information including assumptions made and results stated in company valuation report should be presented in the notes, including each significant component for all years considered in the valuation model. The rationale behind this is to give the reader the possibility to verify and reconcile easily management’s estimate about the company’s fair value.

14. Step (Extensive Discussion about the procedure to allocate the difference between the company’s fair value and its book value adjusted by (re-)valuations for identifiable knowledge and tangible assets as well as liabilities):

The allocation procedure of the remaining difference (Fair Value of Equity minus Carrying amount of Equity within the ‘Preliminary Modified balance Sheet (2)) to structure dependent items should be clearly explained; this is in essence detailed explanation of step 7). Relative weights used for the allocation (i.e. the metric (numerical) basis for the allocation) for each knowledge and tangible asset should be explained as well. These relative weights should be compared in the next year with the prior years’ keys to show their consistent application. The comparisons should include 3-5 periods.

15. Step (comparison of projected figures used in the valuation report and the respective actual figures for the same periods):

For each following year, a new or updated valuation report should be presented. But also, the first projected year of the last year’s valuation report should be compared with the actual figures of that respective period which is just past (actual vs. projected). Any further period should add a further period leaving at least 3 past periods with actual figures compared with equivalent projected figures from the historical valuation reports.

The following picture shows this procedure graphically:
The “initial plan” includes as components, e.g., future cash flows and interest rates. The “revised plan” a period later includes the same components with revised figures, e.g., revised future cash flows and interest rates. The “actual” results comprise the same components as the initial and revised plan, but the figures became real, i.e. actual, in the last period.

The reason for that is to show the readers the reliability of management’s estimates and statements. Also, the difference between the initially estimated/ projected figures and the actual figures should be discussed by management in the notes. The reliability of the values of the intangible assets is also validated by this step.

16. Step (each knowledge value presented on the face of the balance sheet should be compared with the value in the last 3-5 years):
Each single knowledge value should also be compared and shown with the past 3-5 periods. Management should discuss any significant movement.

17. Step (discussion by company’s management how the fair value of the company as a whole and each single stand-alone and linked intangible asset relates to the company’s objectives and strategies):
Finally, management should discuss in the notes how the FV of the company as a whole and each particular knowledge asset individually, either separable or interrelated with the company, as well as structural tangible value are linked to the company’s strategy and objectives (management could use, as a guideline, a widely known intellectual capital approach as a structure for this reporting). By doing this, company’s objectives and strategies
are linked to the FV of the company (as well as to the company’s budget) and to the value of each knowledge asset. (Side-Effect: by doing this management is implicitly forced to actively manage its hidden assets)
Appendix II – FiMIAM Model

The FiMIAM Model as suggested by Rodov et al. (Rodov, I., Leliaert, P., (2002). ‘FiMIAM: financial method of intangible assets measurement’. Journal of Intellectual Capital, Vol. 3, No. 3, pp. 323-336) is suggested as both comprehensive and quantitative yet still sufficiently concise and simple, and linking the knowledge value (the authors use the term “intellectual capital) to the market valuation over and above book value. It is based on the overlapping three-leaf model for knowledge assets regarding the interdependence of human, customer, organizational components.

According to this model a firm’s knowledge assets consists of human, customer, and structural classes. The overlaps represent the combinations of two or three of the knowledge asset classes. The combination of human and customer capital consists of individuals’ closeness (relationship) to customer and the application of their creativity to specific customer needs. The combination of structural and customer capital reflects a company’s ability to leverage customers’ brand, as well as the value that customers attribute to the firms brand name. The combination of human and structural capital lies within the knowledge processes, i.e. the sharing and externalization of tacit knowledge and dissemination of explicit knowledge.

The FiMIAM method enables one to assess the monetary values of the relevant knowledge asset components and to include these in the company’s complete balance-sheets. Moreover, it provides a tool for managers to evaluate, manage and compare the company’s performance over time.

In Applying FiMIAM method the following steps have to be processed:

**Step 1: determining the “realized intellectual capital”**

The difference between the book value and the market value may be defined as the “realized knowledge value”. The term “realized” indicates that the firm’s “real” knowledge value could be greater or less than this amount, given that the company’s market value fluctuates in response to investor sentiment. In other words, the day-to-day movement of a firm’s market valuation “proves” the value of its knowledge assets, irrespective of what its “real” potential is.

**Step 2: identifying the relevant components of company’s knowledge**

The firm now has to analyze its historical financial and non-financial data and select the most important components of its knowledge basis, i.e. the knowledge assets that underpin and explain its future revenue potential (subjective and not comparable between two different companies). The components thus selected should be clustered according to the three-leaf model.

**Step 3: assigning relative weights to knowledge components**
Based on their experience and understanding of value creation in their firm, the top management should assign appropriate coefficients to each of the components reflecting the relative weight that each component has in the firm’s overall knowledge basis.

**Step 4: justification of the coefficients**

Supporting evidence is required for justification of chosen coefficients

**Step 5: assigning value**

The monetary value of these knowledge components is calculated by multiplying their respective coefficients by the total realized knowledge value

**Step 6: Adding together realized knowledge value and book value**

Finally a new “market bottom line” is created by adding these knowledge values to the firms book value.
### Appendix III

#### BALANCE SHEET as of Year End

<table>
<thead>
<tr>
<th>Knowledge assets</th>
<th>Equity Share Capital</th>
<th>Share Premium</th>
<th>Retained Earnings (incl. P&amp;L of year end)</th>
<th>Revaluation Reserves for knowledge assets</th>
<th>Revaluation reserves for tangible assets (and liabilities)</th>
<th>Other Revaluation Reserves</th>
<th>Other Liabilities</th>
<th>Bank Overdraft</th>
<th>Loans</th>
<th>Accounts Payable</th>
<th>Provisions</th>
<th>Deferred Tax</th>
<th>Other Revaluation Reserves</th>
<th>Intangible assets (knowledge assets already recognized)</th>
<th>PP&amp;E</th>
<th>Investments in Securities</th>
<th>Deferred Tax</th>
<th>Accounts Receivable</th>
<th>other receivables</th>
<th>cash &amp; cash equivalents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additions from company structure related residual value dependent on the company as a whole (residual from valuation of the company at fair value)</td>
<td>120</td>
<td>70</td>
<td>95</td>
<td>310</td>
<td>-85</td>
<td>40</td>
<td>-12</td>
<td>65</td>
<td>52</td>
<td>44</td>
<td>500</td>
<td>140</td>
<td>60</td>
<td>-3</td>
<td>-3</td>
<td>487</td>
<td>487</td>
<td>185</td>
<td>20</td>
<td>351</td>
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<tr>
<td>Additions from company structure related residual value dependent on the company as a whole</td>
<td>120</td>
<td>70</td>
<td>95</td>
<td>310</td>
<td>-85</td>
<td>40</td>
<td>-12</td>
<td>65</td>
<td>52</td>
<td>44</td>
<td>500</td>
<td>140</td>
<td>60</td>
<td>-3</td>
<td>-3</td>
<td>-3</td>
<td>487</td>
<td>487</td>
<td>185</td>
<td>20</td>
</tr>
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</table>
**Appendix IV**

<table>
<thead>
<tr>
<th></th>
<th>Today</th>
<th>New Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company structure related residual value</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Revaluation of knowledge assets (structure related)</td>
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<td>12</td>
</tr>
<tr>
<td>Revaluation of knowledge assets (stand-alone)</td>
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<td>11</td>
</tr>
<tr>
<td>Revaluation of PP&amp;E at fair value (structure related)</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Revaluation reserve tangible assets/ liability (structure related)</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>Revaluation reserve tangible assets/ liability (stand-alone)</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>Revaluation reserve Company structure related residual value</td>
<td>3</td>
<td>3</td>
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<tr>
<td>Revaluation reserve knowledge assets (structure related)</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Revaluation reserve knowledge assets (stand-alone)</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Revaluation reserve tangible assets/ liability (structure related)</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>Revaluation reserve tangible assets/ liability (stand-alone)</td>
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<td>23</td>
</tr>
<tr>
<td>Revaluation reserve Company structure related residual value</td>
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<td>3</td>
</tr>
<tr>
<td>Intangible assets (currently reported)</td>
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<td>6</td>
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<tr>
<td>Intangible assets</td>
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<tr>
<td>Other current revaluation reserves</td>
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<td>3</td>
</tr>
<tr>
<td>Other current revaluation reserves</td>
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<td>3</td>
</tr>
<tr>
<td>Retained earnings</td>
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</tr>
<tr>
<td>Retained earnings</td>
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<tr>
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<tr>
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<tr>
<td>Other liabilities</td>
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<td>14</td>
</tr>
<tr>
<td>Other liabilities</td>
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<td>14</td>
</tr>
<tr>
<td>Cash &amp; equiv.</td>
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</tr>
<tr>
<td>Cash &amp; equiv.</td>
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<tr>
<td>43</td>
<td>103</td>
<td></td>
</tr>
</tbody>
</table>

Note (1): In the accompanying notes a break-down of the different intangible components with their value will be shown, e.g. customer list, research activities, knowledge of the people and the company, etc.

Note (2): In the accompanying notes those different intangibles are explained and linked to the company's objectives/ strategies.

Note (3): The value of each intangible asset can be reconciled to the company's fair value and verified in the accompanying notes.
<table>
<thead>
<tr>
<th>Name:</th>
<th>Investor (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date &amp; Time:</td>
<td>7 April 2010; 10:30am – 11:30am</td>
</tr>
<tr>
<td>Interview Reference:</td>
<td>Investor (1)/ part II</td>
</tr>
<tr>
<td>Location:</td>
<td>by telephone</td>
</tr>
<tr>
<td>Interview Language:</td>
<td>German</td>
</tr>
<tr>
<td>Notes:</td>
<td>German based IFM; Translation from German to English</td>
</tr>
</tbody>
</table>
Q_1) Please give a brief description of the model in your own words and based on your understanding?

Starting from the current balance sheet, currently recognized intangible assets are revalued at fair value. Same as for tangible assets which are fair valued as well. All other identified intangibles, which are not yet recognized, are also fair valued and recognized. The differences between current carrying value and the fair value after revaluation are booked against the shareholders' equity. Then, the company as a whole is valued based on generally accepted fair valuation methods. The company's fair value is compared with the value of the shareholders' equity after adjustments from the three steps as described before. The difference should be further allocated to the identified tangible and intangible assets to reflect value-adding connections between them. The latter part is the amount which could not be allocated directly to the tangible and intangible fair values on a stand-alone basis, but which becomes value relevant when individual assets of a company interact with each other. As a result, the fair value of the company is broken down into the fair values of each single identified asset as well as possible added-value effects from their interactions are taken into considerations. Any further difference is shown separately from the other identified assets. For all differences the counter-entry for the accounts is shareholders' equity. All these results are carried forward in a consistent manner. All movements from one year to the next should be explained in detail in the notes. There are additional notes disclosures which should enhance the understandability of the fair value of a company and its underlying value sources. Such disclosures should also show that the fair values and related information are not arbitrary, but they are based on verifiable estimates and analyses. The disclosure requirements consist of descriptions of and explanations for the reasons for the various increases/decreases in the carrying fair values and link them to the company's future financial development and strategy. If my understanding is correct the aim of these disclosures is to provide more detailed information whereby financial statements users should be put in a position to better verify and assess the reasonableness of a company's management statements through the detailed information provided. That was my understanding.

Q_2a) From your point of view, is the proposed model (KnowVRM) decision-useful, i.e. useful in assessing cash flow prospects and in assessing stewardship of a company?
I think - yes. It gives a lot of interesting and detailed information. Some bits and pieces I already receive, but they are not provided in a structure like this. Thus, I think it could be helpful in assessing a company.

Q_2b) Why do you think that the model is decision-useful?
Well - there are many components which are useful, which provides useful insights. Insights about the intangible elements which are not included yet in the financial reports will help understanding the sources from which revenues are generated. It gives a lot bits and pieces - and management’s understanding how they relate to each other which will certainly help analyze a company’s development. The usefulness may also depend on the different industries, but for many industries and companies it has certainly the ability to make a difference - I think it is very useful. It shows all intangible assets that contributes to the fair value of a company and the underlying reasons as it is assessed by the management of this company. Even though some parts of such information I already know, but I only receive single pieces of a puzzle which I have to put together. This approach seems to provide a more structured way. I am not sure how companies themselves think about this approach, because there is much information which needs to be put together for this approach. Even though the disclosures are extensive, I believe that discussions with management remain important. There are a lot of explanations and much information provided, but they certainly raise some other questions for which management is needed to solve them. However, the approach would allow to have a much better understanding of a company before talking to it. This also means that our initial due diligence process for new investments become more efficient as we have already additional information available at that stage. Thus, I think this approach is certainly useful, but it will not answer to any question a current or potential investor may have in respect to the intangible basis of a company, but it enhances the current financial statements has they are too much restricted to past events and does not provide useful forward-looking information.

Q_3a) Do you think that the proposed model (KnowVRM) provides useful information about an entity's economic resources, claims on those resources and changes in resources and claims as well as changes in resources and claims resulting from financial performance?
yes, it does.

**Q_3b)** Why do you think that the model provides such useful information, i.e. information about an entity's economic resources, claims on those resources and changes in resources and claims as well as changes in resources and claims resulting from financial performance?

As I already explained, it provides many details about the intangibles of a company. But the real benefit of this approach is - at least for me - in addition to the various details that the individual intangible assets are linked to each other. The figures are supported by explanations which allows me to get deeper insights in less time and it helps me in my own analysis. Also, the approach shows the intangible sources of a company and link it the its overall fair value and how it will be realized over the next periods. The latter is very interesting for me as it facilitates my own analysis by giving me more details that are linked to the overall activity and performance of a company I think this approach is a very good basis for further discussions with the management.

**Q_4a)** From your point of view, is the proposed model (KnowVRM) relevant, i.e. does the model improve the predictive and confirmatory value of financial information?

It is useful, so also relevant. I would see it in this way. As it gives many insights into a company's valuable assets, it should also help understand the company's potential in the future. Also, the detailed information on intangibles will certainly also enhance the quality of checks I usually do by reconciling information I have received with the financial statements of the company. But it will clearly also help in the screening process of potential new investments.

**Q_4b)** Why do you think is the proposed model (KnowVRM) relevant, i.e. improve the predictive and confirmatory value of financial information?

I believe this I have already answered. It is the degree of detail together with this framework which helps in the analysis of a company.

**Q_5a)** Does the proposed model (KnowVRM) present faithfully (reliable) financial reporting information, i.e. the information is verifiable?
Yes.

Q_5b) Why do think you it represents faithfully financial reporting information?
Well, let me think about … the information given in the report is justified by various different discussions and other analysis. Management has to explain in all details and in length the different disclosures made. I can now see and compare the various statements with my knowledge and with other parts of the information available from the company. - Yes, it is reliable for me. Perhaps someone from external could also look at it; it may help increasing the reliability, but I do not see a significant benefit by doing that.

Q_6a) Are there any constrains you might think about regarding the proposed model (KnowVRM) (e.g. cost vs. benefit)?
Certainly there are some.

Q_6b) Which constrains do you think about?
I think it could be very expensive for a company to implement this approach. There is clearly a benefit, but I do not know the costs relating to the implementation of this approach. I tend to say it is worth implementing it. Furthermore, such information is only useful if it is reliable to a reasonable degree. This does not mean that the information must be free of any uncertainty. For example, outcomes of valuation processes are per se uncertain in nature. The information shown by a company should be generally provided with good faith and it should be reviewed by an independent party such as the auditors. I think the more information is provided, the easier a company could manipulate the information and mislead the readers. To a certain degree I could identify this, but it might be better if someone else could ensure that the information provided were not subject to intentional manipulations.

Finally, I think it will take some time for a company to collect all the necessary information. Much of them a company might already have, but some others, for example the valuation report of the company, it might not be immediately available. However, I could imagine that a timely process is feasible after having implemented
it and the company became used to work with the process necessary to collect the information.

**Q_7a)** What do you think, are the benefits or cost prevailing in applying this proposed model (KnowVRM)?

I don't know. I see the benefits, but it is difficult to estimate the related costs of implementing this approach as I am not an internal specialists for this. But I believe it should be worth doing it as much information of that approach is already available somewhere and the approach mainly provides a structured presentation and in many cases a coherent link.

**Q_7b)** Why do you think that the benefits/cost prevail(s)?

I have already answered this question with the previous response I think.

**7c)** Where should the new model be placed in respect to financial reporting and why:

a) Integrated in the current published financial statements;

b) Attached to the current published financial statements with a reconciliation to the financial statements figures and information;

c) Supplementary information separated from the current published financial statements (similar to environmental, social and ethical reporting);

d) Any other suggestions how to communicate such a Knowledge Valuation and Reporting Model? - Please state.

I think b) as the figures should be reconcilable to the financial statements. I could also think about integrating this approach into the current financial statements if it is done consistently, but b) seems to be fine as the approach is then somehow integrated into the current reporting. I think it is also important that it is associated to the financial statements as it would be useful if an auditor would review that information as well.

**Q_8a)** Overall, do you think that the proposed Model KnowVRM would improve current financial statements?
I would say yes. The current financial statements are too much driven from the past which limits their usefulness. Also, I am more interested in the value drivers of a company such as products, services, etc. and less in historical transactions as those transactions I become usually aware before they take place. It is good to have an overview of such transactions to compare with what is expected, but they are not very useful in determining whether a company is worth investing in. To do a proper analysis, much more details and particularly forward looking information is needed. Thus, this approach here is useful - at least from my point of view as it gives more insight into some intangible value drivers and link them to future expectations.

Q_8b) Why do you think that the proposed model improves financial statements?
We have just talked about this.