Digital R&D Fund for the Arts

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Executive Summary

The aim of NetPark was to test the potential for artists, researchers and developers to create an extensible and mobile experience that connects to public spaces as a dynamic locative experience. Additionally, the project aimed to explore the educational potential of NetPark by creating educational works in collaboration with local school children. As a funded R&D project, NetPark was a collaboration between the arts organisation Metal, the mobile app development company Calvium, and researchers at the University of Brighton. This report presents the process and results of creating a free public digital arts park in Chalkwell Park, Southend-on-Sea, where Metal has its base.

Three artworks were commissioned to create digital artwork to be experienced by the general public in the park, supported by Metal and Calvium. Rosie Poebright created ‘Run to Flight’ a locative audio app using GPS; Joel Cahen created ‘The Oneironaut’ where users experience a narrated dream and contention of reality; Mark Grist and DJ Mixy (Michael Riccardi) created ‘The Spoken Word Tours’ - a series of performance and musical works based on observations of park users, also including work with school children as performance poetry. Alongside these R&D funded works, Metal commissioned a further two artworks for NetPark: Jamie Gledhill who created the augmented reality project ‘Talking Trees’ utilising the Junaio browser; and music duo Matmos to create a new sound work app, where the artists sampled sounds from the park and made new musical works.

In addition to the commissioned artists, Metal raised additional funds to enable five local primary schools to take part in a series of eight-week long workshops to create locative story apps for younger visitors to the park, in collaboration with professional authors and illustrators.

The researchers at the University of Brighton’s School of Arts, Design and Media collected and analysed research material, including interviews and observations, that provided insights into stakeholder issues related to the project delivery, the perspective of makers on creating locative media art, the user experience of artworks in the form of locative media apps, and the educational aspect of creating works with schools.
The key insights:

- NetPark is a creative response to the challenges local authorities face around public spaces and parks, drawing on opportunities of the digital and creative economy, to establish a process for artistic and educational creation as well as stakeholder engagement.

- NetPark shows how the combination of the park setting with digital, mobile and locative technologies facilitates new user experiences and engages new audiences.

- Engaging local school children in locative media creation for NetPark has a range of educational opportunities and benefits.

- Understanding the user experience and the educational opportunities of NetPark can inform further engagement with diverse communities.

- Curating and maintaining NetPark is an important part of its strategy and follows the setting-up process.

- The NetPark Toolkit contains guidance and resources on the process of commissioning, producing and maintaining both locative digital art works and locative educational digital works in public outdoor spaces.

- The NetPark project makes a contribution to the long-term development of public space in a digital age.
Background

Imagine the potential of a popular municipal park to double as a virtual art gallery. Imagine that as you enter the park you are made aware that the park houses a virtual collection of experiences. You access an app on your phone that instructs you to put your headphones on and leads you on a narrative journey through the landscape. Suddenly the expected range of sensations, emotions and perceptions are no longer the limit of what you may experience here; the virtual narrative gives rise to new kinds of sensations and transforms the way you perceive your surroundings; perhaps the trees have stories to tell, the flower patches are portals to decades past, or the pond is the setting for a meditative exercise. Your time in the park becomes an opportunity to inhabit new creative and hybrid spaces. This is what Metal have called ‘NetPark’; an example of a digital collection of locative artworks made freely available in a public space.

The year-long NetPark project set out to create a dynamic digital arts layer of a popular public park in Southend-on-Sea, with the overarching aim of exploring the potential for creating art experiences in public spaces. As part of the R&D process, NetPark sought to produce a ‘toolkit’ aimed at other institutions who may wish to take advantage of the potential of digital art for public spaces (http://www.netpark.zone/toolkit).

The locative digital artworks, which are accessible by free public Wi-Fi within the park’s grounds, are designed to provide a mobile experience for users both in terms of device and as a walking experience. The users can move around the park to explore added digital layers of experience through sound and narrative, which respond to the users’ physical location in the park.

Locative art and media

In recent years, it has become increasingly easier to connect (location-dependent) digital information with physical spaces. For example, many people ‘add a location’ to their photos or updates on Instagram or Facebook, and many use mobile phones to ‘discover content around you’. These locative media technologies have opened new arenas for artists to create work that engage new representations of space and produce new forms of spatial perception.
A broad definition of 'locative art' includes experimental and artistic practices that engage the relationship between networked mobile media and their physical and social contexts. Sustained experimentation and discussion around locative media and art emerged in the late 1990s, followed by an ever-expanding body of artworks, publications and events—all of which have stayed largely outside the mainstream. Practices and debates from the mid-2000s are quite well documented (Galloway & Ward, 2006; Tutors & Varnelis, 2006; Russel, 2004; Tarkka, 2005, Kraan, 2006). For example, in 2006, Hemment (Hemment, 2006b) regards locative media as:

"a 'test category' for the convergence of geographical and data space" that "include[s] bodily, technological and cultural components, combining cultural practices and the embodiment of the user, with various "media" and location sensing technologies such as GPS."

Locative media artworks interact with people’s sense of place and some of the most attractive uses of locative media are related to creative purposes such as exploring in-site narratives or gaming, through strategies such as geo-caching, mapping and walking through cities (Cornelio and Ardevol, 2011). Locative media, because it fosters interaction between places and objects with informational devices and through sending, collecting and processing informational data (Lemos, 2010: 405), provides an interesting interface for creating participative forms of entertainment, and possibilities to explore new and old models of communication, community and exchange (Russell, 2004). The use of sound and music in locative art is of particular interest because the use of screens is often challenging in the mobile context (Behrendt, 2012, 2013, 2014, 2015).

Although some have argued (e.g. Brucker-Cohen, 2014) that the initial ‘hype’ and enthusiasm surrounding the creative use of locative media by artists have somewhat levelled off in the 2010s, the full potential of geospatial technologies for creating more permanent public art projects on a large scale has still to be realised.

The increasing ubiquity of location-aware technology (e.g. smart phones) has an impact on conceptions of what forms public art may take in our contemporary network society. Increasingly, arts organisations want to cultivate audience access and engagement by devising projects that can be consumed by large, diverse audiences on the mobile devices people already
have in their hands. Where arts institutions have engaged with locative art, this has often been in a ‘pop-up’ fashion, for example through a one-off festival, exhibition, or a commission. However, there is very little long-term engagement with locative art that addresses the commissioning, collecting and curating as part of an institution’s strategy. The NetPark project has contributed to understanding these processes. In a time where ‘Smart Cities’ and the ‘Internet of Things’ often contribute to the privatisation of public spaces, locative art can provide an important alternative.

Partners

NetPark was a collaboration between the arts organisation Metal, the mobile app development company Calvium and researchers at the University of Brighton. The project was led by Metal, by Principal Investigator Simon Poulter, associate curator and Colette Bailey, artistic director. Frauke Behrendt at the University of Brighton and Josephine Reid, Creative Director at Calvium, are Co-Investigators on the project. Frauke Behrendt and Karolina Doughty (Research Officer) in the School of Art, Design and Media worked closely with Metal and Calvium to provide the research component of the project.

- Metal specialise in developing projects that are public facing, often site-specific and highly participatory, that engage with people of all ages and from all walks of life. The NetPark project was developed around the unique resources of Chalkwell Hall, Metal’s base in Chalkwell Park, Southend-on-Sea. Their creative base in the park, with space for artist residency, enables them to readily iterate a series of new artworks that explore sound, visuals and narrative content.

- Calvium is an app development company that works to make technology accessible to the creative industries. Their AppFurnace platform (www.appfurnace.com) provided everything the artists needed to create an iPhone or Android app. AppFurnace allowed the artists to easily attach stories, videos, or information to places so that they could produce apps that created a rich digital layer over the physical world.

- Dr Frauke Behrendt is a Principal Lecturer in Media Studies at the University of Brighton. She brought her research expertise in the areas of digital cultures, sound studies, mobility, media theory and sustainable/green media to the project. Her research combines empirical
and theoretical investigations of the link between mobility, sound and media and how this is articulated both in contemporary art and in everyday life.

- Dr Karolina Doughty is a Lecturer in Sociology at the University of Brighton, and joined this project as its Research Officer in February 2015. She was able to draw on her expertise of qualitative research methods, and previous studies in the areas of mobilities and sound geographies, in her work on the project.

**Making the project happen**

NetPark grew out of existing relationships between Metal, Simon Poulter and Calvium. They had worked on Rachel Lichtenstein’s ‘Diamond Street’ app based on her book of the same name. This project had built a working relationship and shared understanding of the potential of a locative experience. ‘Diamond Street’ uses AppFurnace as a development platform and Rachel Lichtenstein assembled a team that included Francesca Panetta (The Guardian) as well as Metal (with Simon designing the front end). From this was established a high quality approach to editorial content. Jo Reid at Calvium emphasised this as the best strategy towards an app of this kind. Consequently, many of the lessons learned from this project were rolled over into NetPark.

Dr Frauke Behrendt completed the NetPark R&D team. She brought fresh insights and a live interest and portfolio in the sociological perspectives of locative experiences.

The Parks team and the Digital Strategy Board at Southend-on-Sea Borough Council were involved as a local stakeholders in the NetPark project since the early development of the funding bid, their concern being primarily with the impact on the park, and safeguarding its existing users, but also the potential of the project to attract new visitors, not only to the park but also to the town and surrounding areas.

Malcolm Garrett from Images & Co had been part of an original development team for NetPark in 2012. He re-joined the NetPark team in 2014 once funding had been achieved and has taken a vital role in helping to think through how to communicate to audiences from the physical space
of Chalkwell Park into the digital space of NetPark through signage and other means.
The Project

As an R&D project, the overarching focus was trained on understanding the challenges and potential of the process of creating a digital arts park for both art and educational works. As such, the research component was designed to provide insight into the process and experience of NetPark through the perspectives of the stakeholders, the makers, and the audience. As the final digital works were not publicly launched until September 2015, the project examined the user experience through user testing of the apps during their later development stages.

Figure 1: Artists, school children and project partners at a workshop day in the park

The NetPark project had four inter-related aspects:

1. creating the NetPark itself
2. creating art works for NetPark
3. creating educational works for NetPark
4. creating the NetPark toolkit.
Creating NetPark

To create the NetPark that would host the art and educational works, free Wi-Fi was installed in the park, a web gateway was created (to hold the art and educational apps) and physical signage was designed and installed in the park.

Free public Wi-Fi was installed in the park to provide access to all digital work, with a network using ‘NetPark’ as the public name of the network. Entrance is by guest pass using a Ruckus Wireless system of access points and software analytics.

Visitors to the park can connect to the network through the Internet browser on Apple or Android devices. Each work is accessible to the public through downloading an app via the App Store or Google Play on a smart device. In some cases projects are optimised for certain devices, i.e. the educational apps are made for iPads on a horizontal picture book format, whereas the artists’ apps are dual platform for Android and iOS phones.

A web gateway was deployed to create a navigable structure for the whole project. This is built as a responsive website for multiple devices and includes links to app downloads, descriptions of the projects and ancillary information. This is hosted at netpark.zone

The Wi-Fi installation required an audit to establish which locations in the park were appropriate for good and consistent signal coverage, and resulted in a zoned map to assist this work. The audit highlighted the difficulty of serving the memorial garden with Wi-Fi due to leaf coverage and this was removed from the target areas. The audit was carried out in late autumn requiring some allowance for greater leaf coverage and decreased line of site for Wi-Fi. The system comprises of 6 managed access points and 2 back-up points for increased coverage. These points are managed by a Ruckus Zone Director with analytics and management software. The network can be accessed using VPN by the suppliers for maintenance and the Metal team, as well as the researchers from University of Brighton.
Figure 2: The NetPark Zone Map shows the installed wifi points and the zones where testing confirmed excellent wifi reception coinciding with park areas of interest.

Figure 3: Testing of the Wifi speed
Figure 4: The WiFi antennas are installed alongside the existing wind and solar power systems on Metal’s roof.

Figure 5: Testing of the GPS reception in the Park.
Physical signage was designed and created as part of the process of creating NetPark. It is an important feature of alerting casual and regular park users to the digital layer of NetPark. The signage works in line with the zonal areas (or park regions) and optimises successful use of the projects. Overall the user experience (UX) design of NetPark aims to give a consistent experience from the physical to the digital and vice versa.

The NetPark signage design operates to include statutory park regulations, as well as ‘heads up’ maps. A heads up map shows the orientation of the park as you view it and not according to a ‘north-south’ paradigm. This derives from the pioneering work of Bristol Legible City (http://www.bristollegiblecity.info/projects/66.html). Signage work requires permissions from the local authority or site owner, as well as careful planning in relation to height (e.g. for children) and lighting. NetPark has a series of monoliths located at key points in the park. These are constructed from vitreous enamel and are very durable.

![NetPark Signage](image)

**Figure 6: A draft version of the design for the physical signage**

**Artists Commissions for NetPark**

In total, five artists were commissioned by Metal to create digital artworks to be experienced by the general public in the park. Metal provided the commissioning support structure that included residential LAB-style development time at Chalkwell Hall as well as expertise (artistic and
technical). Calvium provided the software platform AppFurnace, along with software development support for three of the artworks, which enabled the production of high quality apps without requiring that the artists had prior knowledge of app development. The initial five NetPark artworks are as follows

- Rosie Poebright created ‘Run to Flight’ a locative audio app using GPS, in which through multiple choice the client encounters a narrative based on their movement in the park.

- Joel Cahen created ‘The Oneironaut’ a dream narrative as app where users experience a narrated dream and contention of reality - a mixed reality - which incorporates references to information within the park, such as park bench memorials.

- Mark Grist and DJ Mixy (Michael Riccardi) created ‘The Spoken Word Tours’ - a series of performance and musical works based on observations of park users. Also including work with school children as performance poetry.

- Jamie Gledhill created the augmented reality project ‘Talking Trees’ utilising the Junaio browser. This enabled video and audio narratives to be overlaid on trees in relation to natural marker points.

- Finally, Metal commissioned music duo Matmos to create a new sound work app, where the artists sampled sounds from the park and made new musical works, including peacocks, railings and human voices.
Educational Works for NetPark

In addition to the commissioned artists, five local primary schools took part in eight-week long series of workshops to create locative story apps for younger visitors to the park, in collaboration with professional authors and illustrators. This resulted in cross-curricular project work with children (aged 8-10) covering drawing, use of GPS, hexadecimal code, story writing and illustration. The hexadecimal code sessions explained the use of colour in digital media software.

More detail on this can be found in the results section of this report. Some of the educational NetPark work was funded by an additional grant by the Royal Opera House Bridge (based In Thurrock).
NetPark Toolkit

The NetPark toolkit was created to give wide access to third party arts clients wishing to benefit from the projects research and development. It clarifies the key stages in developing a project of this nature and how integration was achieved across the technical and creative elements (see results section of this report).
Research questions, design and methods

Research questions
The overarching research question that provided the focus and structure for the research design was: What are the processes and challenges involved in creating, hosting and experiencing work digitally in a public park?

The research was further guided by four sub-questions:

1. What are the stakeholders and actions involved in creating an extensible and dynamic mobile/locative art experience in a public park?
2. How do audiences respond to the new artworks created?
3. How can local schools be involved in the creation of digital story apps aimed at children?
4. How can these insights translate into a toolkit for future use by other institutions?

Research Design
The research partners on the project, Dr Frauke Behrendt and Dr Karolina Doughty at the University of Brighton, designed a data collection plan (see table) for the project in response to the above research questions. The research was carried out in Chalkwell Park and at Metal’s headquarters in Chalkwell Hall between February and July 2015, and utilised a mixed methods approach with a) qualitative and b) quantitative elements of data collection, explained in further detail below.

Overview of research activities

<table>
<thead>
<tr>
<th>Type</th>
<th>Number</th>
<th>Participants</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation of educational workshops</td>
<td>3</td>
<td>11 pupils 1 teacher</td>
<td>To understand how local school children can be involved in creating a story app for younger park visitors</td>
</tr>
<tr>
<td>Interviews with education users</td>
<td>4</td>
<td>3 pupils 1 teacher</td>
<td>To find out how the children and teacher experienced the workshops</td>
</tr>
<tr>
<td>Type</td>
<td>Number</td>
<td>Participants</td>
<td>Objective</td>
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<td>------------------------------------------------</td>
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</tr>
<tr>
<td>Questionnaire feedback from teachers involved in educational projects</td>
<td>5</td>
<td>5 teachers</td>
<td>To find out how the teachers and children experienced the workshops and how they linked in with the curriculum</td>
</tr>
<tr>
<td>User testing, observation and interviews</td>
<td>8</td>
<td>8 park users</td>
<td>To find out how non-expert users experience the apps, and identify any barriers to use or technological problems</td>
</tr>
<tr>
<td>Interviews with artists</td>
<td>4</td>
<td>4 commissioned artists</td>
<td>To understand the maker’s perspective on creating a digital arts park</td>
</tr>
<tr>
<td>Interviews with stakeholders</td>
<td>3</td>
<td>The arts partner</td>
<td>The industry partner</td>
</tr>
<tr>
<td>Public wi-fi access analytics</td>
<td>1</td>
<td>Wi-fi gateway analytics report</td>
<td>To find out how the free wi-fi has been used by park visitors, including concurrent users, amount of data transmitted and signal quality, the most active access point and most popular time of day.</td>
</tr>
</tbody>
</table>

Drs Behrendt and Doughty worked closely with Metal to provide the research component of the project. Metal assisted the research process by helping to recruit non-expert users for app testing and facilitating the interviews with education users, artists and the representative of Southend-on-Sea Borough Council.
Understanding the Stakeholder Perspective
Semi-structured interviews were used with members of the project team and a local authority representative in response to research question 1; ‘what are the stakeholders and actions involved in creating an extensible and dynamic mobile/locative art experience in a public park?’

Interviews were conducted with the Principal Investigator Simon Poulter, Associate Curator at Metal, Colette Bailey, Artistic Director & CEO of Metal, and Josephine Reid, Creative Director of Calvium, and one representative of Southend Borough Council.

Examining the Artist Perspective
Semi-structured interviews were conducted with the five artists commissioned to create digital artwork for the park; Jamie Gledhill, Rosie Poebright, Joel Cahen, and collaborators Mark Grist and Michael Riccardi, to understand their viewpoint on the project and experience of creating digital works for the park. This was in response to research question 1.

Understanding the User Experience
Interviews and observations were conducted with eight park users to gather data on user testing of the apps in the park, in response to research question 2; ‘how do audiences respond to the new artworks created?’. As the final digital works will not be publicly launched until September 2015, we examined the user experience through user testing of the apps during their later development stages. In order to capture user responses, the researcher accompanied the user around the park while they experienced the app for the first time, and audio recorded the walk to aid memory, following this the user was interviewed about their experience.

Exploring Education
A range of qualitative methods were used to gather material for research question 3, ‘how can local schools be involved in the creation of digital artworks aimed at children?’ These methods included observation, semi-structured interviews and one short questionnaire.

Observational methods were used to gather data around educational and learning issues. The observation carried out by the researcher involved her being present for three two-hour workshops, using primarily note-taking,
but also photography where appropriate, to aid memory. The observations focused on;

- the main activities of the session,
- the key educational purpose of the session,
- what happened, such as responses and outcomes, and finally
- a reflective summary of the session as a whole.

Semi-structured interviews were also conducted with one schoolteacher and three pupils from the first school taking part in the educational project, which involved designing a locative story app aimed at younger visitors to the park. These interviews lasted approximately 10-15 minutes and were conducted at Chalkwell Hall in connection to the final educational workshop on 24 March.

A short questionnaire was used to collect feedback from five schoolteachers involved in further educational projects led by Metal, funded by an additional grant (Royal Opera House Bridge). The questionnaires helped us identify how arts organisations can work with schools on digital arts projects that link in with the curriculum.

**Collecting Data for Analytics**
In addition to engaging with the qualitative research material, the use of the NetPark can also be understood by collecting and analysing data from specific points of interaction. NetPark is an example of the increasing importance of data analytics for arts institution’s audience engagement strategies (Digital R&D, 2015. Making Digital Work. Digital Toolkit for Arts and Culture, [http://artsdigitalrnd.org.uk/toolkit](http://artsdigitalrnd.org.uk/toolkit)). As with any digital project, your key (research) questions need to guide your decisions on the kinds of data that need to be recorded and how they can be analysed. In relation to the NetPark research questions, we designed data collection from five different, but related sources that are explained in more detail in this section. The actual data collection happens after this report is published and is therefore not included in the results section below.
Wi-Fi backend

The Wi-Fi system that has been installed in the park logs a range of data about its usage. The Wi-Fi backend can be accessed through a secure remote log-in (VPN, Virtual Private Network). The Wi-Fi usage data is stored on a separate syslog server so that the data can be analysed over time. Each device that is using the Wi-Fi is logged with its unique MAC address. The analysis and visualisation of the data can include information such as the number of users and the length of their Wi-Fi session for specific weekdays, weekends, weeks and months – all could be visualised along a timeline. Furthermore, the kinds of applications people use on the Wi-Fi can also be analysed, e.g. for social media, NetPark app download, Internet or email.

![Wi-Fi Clients Table]

**Figure 9: Test Data from the Wifi Backend**

Wi-Fi sign-up

When accessing the Wi-Fi for the first time, users have to agree to the Terms and Conditions (T&Cs) of NetPark. This will enable Metal to set out an expected code of conduct whilst using the Wi-Fi and explain that users will be blocked if they do not comply.

There will be an option to leave an email address which will enable Metal to use NetPark as a platform for building new audiences, and to potentially contact users with follow-up information (e.g. new apps) or short surveys (e.g. about their NetPark experience). This will not be compulsory.
NetPark Gateway/landing page

The gateway (landing page) www.netpark.zone can be accessed through NetPark Wi-Fi or through any other network (e.g. mobile phone) from anywhere around the world. It is a locus for encountering the system and directing to downloads of the apps.

QR tags on the physical signage

One of the ways that users will access the www.netpark.zone gateway page, is through QR tags printed onto the physical park signage and on promotional material such as flyers. For example, variant QR codes are created for each sign, linked to gateway. This enables us to see how often the QR code on each sign is used – key for understanding the link between user interaction with the physical (sign) and digital (gateway) aspects of the NetPark.

NetPark app download

Five artists projects and five school workshop groups created separate apps available for download from the App Store on Apple and Android devices. The app analytics (provided through Apple and Google) can provide information on the type of device (e.g. iPhone), the operating system (e.g. Android Jelly Bean) and the country the client was downloading from. However, it is important to keep in mind that downloading an app is not the same as actually using it.

Research ethics

Ethics approval was granted on 14 April 2015 from the College of Arts and Humanities Ethics Committee at the University of Brighton. Gaining ethical consent involved ensuring that all research activities and processes (such as informed consent procedures, protection of privacy, and protection of vulnerable participants, such as children) complied with the ethical guidelines of the university.

Written and Research Outputs

In addition the NetPark with its art and educations works, and the NetPark toolkit (as described in this report), several written and research outputs have been produced:

- An article in the Guardian Observer published on 16 June 2015, Digital park delivers talking trees and a fishy monster in the pond
(http://www.theguardian.com/technology/2015/jun/16/digital-park-netpark-southend)

- Dr Frauke Behrendt was invited to talk about the project at a symposium on Sound and the Urban Environment at ONCA gallery in Brighton in May 2015.

- Simon Poulter’s Talk on Innovative Parks – this comprised of a 15 minute presentation at a Nesta hosted ‘Rethinking Parks ’ event.

- A number of ‘insights’ have been posted on the Digital R&D Fund for the Arts blog (http://artsdigitalrnd.org.uk/projects/metal/)

- Dr Frauke Behrendt was invited to talk about NetPark at the closing event of ‘Plugin Narratives’, a Digital Economy ‘Communities and Culture’ Network+ in February 2015.

- An article is written for submission by Dr Frauke Behrendt and Dr Karolina Doughty to an academic journal.

Resources
The project was funded for the period from 1st August 2014 to 31st August 2015. The overall budget of the project was £118,597.50.
Results

The project set out to test the potential for arts and technical partners, in collaboration with local stakeholders, to create a digital arts park, by implementing free Wi-Fi throughout Chalkwell Park and commissioning artworks that can be experienced by park visitors as apps. Additionally, the project aimed to explore the educational potential of NetPark by creating educational works in collaboration with local school children. The project met these objectives and has shown that this kind of project is achievable and can be replicated successfully in other places.

This result section provides answers to the overarching research question: what are the processes and challenges involved in creating, hosting and experiencing work digitally in a public park?

The first section of the results focuses on the stakeholder perspective of creating an extensible and dynamic mobile/locative art experience in a public park (research question 1). The second section presents results concerning the artist perspective creating NetPark (research question 1). Third, results on the user experience are presented to show how audiences respond to the new artworks created (research question 2). In the fourth section, educational results illustrate how local schools were involved in the creation of digital story apps aimed at children (research question 3). The last results section explains how all these results have translated into a toolkit for future use by other institutions (research question 4).

NetPark Stakeholder Engagement and Actions

While parks continue to offer residents a variety of leisure pursuits, NetPark has demonstrated that there is real potential to grow relationships between software developers, arts organisations and local authorities. Nevertheless, sensitivities and loyalties exist in parks that are not often evident until change occurs. Parks in this respect reflect the values and attitudes of the communities that surround them.

In order to understand what is involved in the process of creating a digital art layer of a public space, it is crucial to understand the stakeholder perspective and key motivations, along with the enablers and constraints faced in the process of making a project like this happen. This section discusses the key themes emerging from interviews with the key
stakeholders; Simon Poulter, Associate Curator at Metal, Colette Bailey, Artistic Director of Metal, Josephine Reid, Creative Director of Calvium, and Paul Jenkinson, Parks Technical Officer from Southend-on-Sea Borough Council’s Department for Place, who was involved in funding and agreeing he new signage for the park.

![Figure 10: NetPark Stakeholder workshop](image)

**Enablers and constraints**

Over the course of the project, the vision for the project as a digital arts park ‘blueprint’ has become more important. This shows how NetPark as a scheme for mobile media art in public space has a value beyond the specific commissions for Chalkwell Park:

“the project I see as the wider thing; the NetPark toolkit, the platform, the signage, it’s the bits that I can see can be commercially doable, that’s the exciting part for me, and that’s where my R&D attention is” (Josephine Reid)

In interviews with the lead project members and stakeholders, a range of enablers and constraints for realising the project at this level became evident.

A clear enabler was the already established working relationship between Simon Poulter and Josephine Reid, described above. Their expertise and ability in maximising existing resources, along with having successfully delivered a locative media project together in the past, was a solid building block for the present work.
Reid’s extensive experience of working with artists to produce locative media apps meant that she was very aware of the possibilities and limitations involved. She was very aware that a custom app-build for an artist could consume the entire project budget alone, whereas the NetPark project required four apps to be built, tested and launched within this budget, and within a six-month time frame. As such, the AppFurnace platform was a crucial resource for the success of the project. As Reid pointed out, the aim of this project was not to create cutting-edge technology, or to push the limits of what can be done with locative media, but to produce highly accessible and sustainable apps that are designed for devices already in people’s hands.

AppFurnace is a web-based software platform that makes it possible for people to make their own apps. Great apps, like other digital publications such as video or web sites, disguise the intricacies of their production to the end user. Whilst it’s now easy for anyone to make a quick video, it is not easy for anyone to make a great video. As such there is often a naivety for anyone embarking on producing their first app as to what it takes to turn a quick prototype into a quality publication.

AppFurnace takes away the technical complexity of creating information pages in an app. It is easy to get started and easy to get what you are developing working on a mobile phone. It also has good support for developing location aware apps. Much like WordPress for website development, AppFurnace cuts down the time it takes for creating simple and functional apps and enabled the artists to be able to develop their ideas within the constraints of the budget.

Whilst AppFurnace is often used as a prototyping tool it can also be used as a professional publishing platform for apps onto both Google play and the Apple app store.

This leads us to what has perhaps been the biggest challenge for the project: the tension between R&D and public outcome. Over the course of the project, NetPark as a realised digital art park has gained significant traction within Metal as a public programme, with the consequence that there was a need for clear artistic outcomes in the shape of finished artworks to be experienced by the public. At times, this created some tension between artist experimentation and the need to produce a finished app. In some cases the ‘artist lab’ approach that Metal has developed produced some tension,
because what some of the artists wanted was the kind of open access to software development time that we could not provide within the constraints of the project. However, Metal and Calvium were able to mitigate these tensions to a large extent by providing guidance and software development support.

Concerns that were addressed from the Council’s point of view were primarily connected to appropriate use of the Wi-Fi, so that abuse of the free bandwidth was safeguarded against and neighbouring residents would not be disturbed by the streaming of music late at night for example, and that there were controls in place to make sure that children cannot access age-inappropriate web content.

The park as a public space

For an arts organisation like Metal that has literally grown in the park there is a need to articulate the value of creativity and artistic endeavour in public space and to share the outcomes in a manner that celebrates the role of the artist in civic life.

The park is a key part of Metal’s vision and strategy as an arts organisation, both as an extension of the laboratory space that Chalkwell Hall offers, and as a key site where the general public comes into contact with artworks in progress and artists at work. These informal encounters, Colette Bailey argues, demystifies the question of ‘what do artists actually do all day?’ The Wi-Fi installation for NetPark strengthens the park’s role as an extended lab, where artists can iterate their ideas and test them.

Locative media arts can be installed in a broad range of public spaces, from parks to city streets or town squares, but parks are well-defined, socially-accepted common spaces that lend themselves particularly well to projects like this because of their affordances of having clear boundaries and uses oriented towards leisure. Locative digital arts are not new, but they are often conceived of as one-off installations or trails, and as Reid pointed out, NetPark goes some way towards showing that scaling up these one-off digital experiences is possible, and it establishes a new norm for what digital arts can be like. In particular the first generation of projects demonstrates how a group of works make a more comprehensive visitor experience, through choice and individual interest, i.e. works for children, sound art and music.
From the perspective of the local authority, the potential positive impact of NetPark is twofold; i) it is an evolving open-air art gallery that does not immediately impact on the look of the park, and ii) making a whole park Wi-Fi enabled can encourage new uses and attract new users, whether its businesspeople taking their work to the park, or schoolchildren doing their homework. Part of what is exciting about a NetPark for the Council’s Parks team is that it brings the park and its possible range of uses and experiences firmly into the 21st century.

Commissioning new work
Another key aspect of the actions involved in creating an extensible and dynamic mobile/locative art experience in a public park (research question 1), is the commissioning of new work for NetPark. The commissioning was by open submission through a competitive call, which went out internationally. The stated aim was to work with artists across disciplines, aligning with Metal’s policy of multi-disciplinary practice. The applicants were invited to submit an idea and not be too concerned with technical delivery. The selection panel comprised of Metal, Calvium and University of Brighton staff, as well as input from Arts Council England regional officers.

An important factor in the first generation of projects was accessibility and appeal to a parkland user base. The selected projects were based upon the potential to make engaging works that would open up the idea of a NetPark to a wider community base. As Colette Bailey stated, it was important that the artworks led the audience to a new engagement with the park, so we looked for commissions that were:

“thought-provoking, thoughtful, that engage you in the landscape in a slightly different way and that are playful, I think playful is a really important word because we’re in a park and people tend to come here in their leisure time to play, in inverted commas, so something that adds a bit of fun”

In all, over 80 applications were received from the UK and abroad, narrowed down to a shortlist that was then deliberated upon by the same panel.

Making Art for NetPark
This section presents results in relation to a specific kind of ‘stakeholder’ - the artists involved in Netpark. These results form part of the answer to our first research question: What stakeholders and actions are involved in creating an extensible and dynamic locative art experience in a public park?
The artists Joel Cahen, Michael Riccardi, Rosie Poebright and Jamie Gledhill (see ‘Project’ section of this report for details of the artworks they created) were interviewed individually to provide insights into the artist experience of, and perspective on, creating work for NetPark

Figure 11: Artists working on their apps in the park

Creating locative artworks as apps
Making creative content for locative media experiences requires artists to pay close attention to the physical setting where the audience will experience their works, and to which their works need to respond. Hybrid space, as Smith (2013) writes, creates the opportunity to perform context engineering by maximising our spatial interaction with the environment. This kind of engagement goes beyond the traditional emphasis on surface, content and representation (Ascott, 2002), because its objective is to transform the experience of a setting and trigger and direct interaction.

The artists were asked about their vision for their artworks and the kind of experiences they wanted to create. All of the artists understood the relationship between digital art and experience design, and used their apps to direct attention to features or objects in the park in order to create a narrative that would take the audience on a journey through the park. Some of the artists were based far away from the park which meant they had to rely on a couple of intensive visits and photographs they had taken while there. All appreciated how important it was to be in residence at Metal, ‘to inhabit the park’ (Poebright).
Jamie Gledhill’s work draws on the social history of the park and surrounding areas and lets the trees in the park tell the audience entertaining anecdotes through an augmented reality feature, involved a lot of research, online, in archives and by talking to staff at Metal and the Council. The result is an enjoyable locative media experience that really engages users with the park and its history.

Similarly, Joel Cahen and Rosie Poebright created narratives that encourage interaction with the park, incorporating elements of play and augmentation of perception, and which successfully transform the park into a hybrid space of exploration and discovery. For example, Poebright explains her work as ‘a transformational walk through a park’ and as ‘an audio experience where the drama is in the player’s head, and their actions and physical movements in the park is the controller, an interactive story game’.

DJ Mixy (Michael Riccardi) previous work, as a rapper and poet had not been attached to a specific location in this manner before, although his work often talks about specific places, such as his local neighbourhood. He hopes that his work will reach new audiences and break pre-conceptions about his genre by telling – amongst other works – an emotive story about a couple, told through the time they spent in the park from childhood to adulthood, which he thinks local people will feel an affinity to:

“I think there’ll be people who have been coming here since they were children and have grown up around the place and had arguments, and got drunk and dirty on the benches, and you know all that stuff” (DJ Mixy).

Our material shows that successful locative media apps as artworks are created by artists who have an appreciation for the potential of blending the digital with the physical to create new hybrid worlds. Artists who have not created locative media works before, may find it more challenging to translate their creative practice to a specific location, if their work does not usually go hand in hand with experience design. However, the commissions for NetPark illustrate that a wide range of artworks that incorporate narrative and sound can successfully be translated into a location-aware experience that transforms the park for its visitors.
Technical R&D

Our research material shows how in creating work for NetPark, the artists had to ‘manage the creative process alongside the technical process’, a process that ‘needs careful facilitation’ (Poebright). The different artists had highly varied levels of technical skills, and not all artists had previous experience of creating content for locative media apps, as one of the artists illustrates in the following quote:

“I could have written and recorded the stuff, but when it comes to the technical side [of creating an app] I was very lost” (DJ Mixy).

As such, the technical support and guidance provided by Calvium and Metal was very important, and the artists all said this was a vital help. As the digital R&D was an important aspect of the project, it was also necessary for the artists to budget quite a bit of their own time for this side of the process, alongside the software support that was available from Calvium. However, this was something that not all artists were prepared for, and as mentioned in the previous section, this created some tensions at times between delivering the creative commission and the need for technical experimentation and for finding technical solutions, which could be quite a challenge for artists with little previous experience of using these technologies.

One of the artists working with elements of AR, Jamie Gledhill, ran up against problems during the design process because the platform he is using was bought up by Apple, which will create a break in service in December 2015, illustrating that rapid technological change can be a real challenge for this type of work:

“I’ve spent a lot of time already, and if I was going to make something that works for three years, we would have to build in review points every three months, every six months, so there’s lots of learning there” (Jamie Gledhill).

However, his content could work on another platform, and there has been discussion about a second iteration of the app further down the line.

Due to the technical challenges involved in this commission, the artists stressed the importance of support from the art organisation and technical partner throughout the process. Asked what advice they would offer future
NetParks, the artists emphasised the importance of guidance through the process – a few key deadlines levied by the art institution to structure progress, for example – and the importance of a willingness on the part of the artist to devote a significant portion of time to develop the technical side of the project.’

**User Experience of NetPark**

Our second research question asks: How do audiences respond to the new artworks created? This section presents results in relation to this question around the user experience. NetPark is about creating a new way to experience a communal park; it extends the park’s uses as a leisure space, and opens doors to new activities: the park as a virtual art gallery, and the park as an extension of the office, school, or home. And more than this, as a Wi-Fi enabled outdoor space, the park is a hybrid location, with the potential to be used and experienced in a number of new ways, forging a new relationship between the digital commons and the physical commons. The user experience is made up by a range of physical and digital aspects, including the physical signage installed in the park, the Wi-Fi use, and their experience of the apps.

**The user’s route to access**

The user’s route to accessing NetPark has been developed as part of the research process. Drawing on research material collected from users and stakeholders, this section illustrates how the creation of NetPark was guided by the user experience. User access to the apps is prompted by a combination of physical and digital markers, consisting of the physical signage, the Wi-Fi, the gateway/landing page, leading finally to the app download from the App Store or Android Market. A visitor who has not heard of NetPark before their visit is likely to be first alerted to its existence by the physical park signs, which will be placed in strategic locations in the park, such as by the entrances and near the playground.

The signage work was developed by Malcolm Garrett of Images&Co. Malcolm was a part of the original NetPark development team who worked up concepts in May 2012. He was selected for his previous experience of working on the ‘Legible London’ project with Transport for London. Integration of experience was seen as an important factor in leading the client from physical to digital experiences and decreasing barriers to access. Within a growing culture of ‘user experience’, the core signage development
work aims to articulate where things are located, how to connect to them and also convey statutory information about park uses (for example dog control).

Once the user has connected to the free Wi-Fi, which involves creating a user account, they will encounter the NetPark gateway, or landing page, where they will find information about the apps, including a short description of each, with a link to download. Alternatively, users can access this page by using their phone data connection. The user chooses an app to download and clicks the link, which takes them to the App Store or Android Market depending on their device. In order to download the free app the user will be prompted to fill in their Apple Store/Android Market password, and if they do not already have an account they will be prompted to create one.

Decreasing barriers to access involves considering not only the usability of the apps themselves but also understanding the full ‘journey to access’ and what potential barriers exist along the way, and provide information to direct the non-expert user so that they are not lost before they even access the app.

User testing of the apps

User testing was carried out with four of the commissioned works. A total of eight users were observed and audio recorded while testing the apps, followed by post-experience interviews. Two of the apps were also tested by one of the researchers. The results from the user tests, and individual user responses are summarised below.

Testing the apps with non-expert users was important in order to identify issues in relation to general accessibility, usability of the interface, and intelligibility of the content, but also in perspective of identifying potential technological issues that needed addressing, for example the accuracy of the GPS zones that would trigger narrative content. In all, user testing highlighted potential gaps in the logic of the apps, between the artist’s intent and the way it would actually be used by an inexpert park visitor. Such a gap could arise when the artist expected a user to behave in a certain way, for example walk at a certain pace, or take a seat on a bench and finish listening to a narrative. This intent was lost on the user who walked too fast, did not wait for an audio file to finish playing and left a GPS zone too
quickly, or walked in the wrong direction. User testing highlighted where these problems would arise, and the artists could design built-in wayfinding features, such as a recording telling the user that they have taken the wrong path, in a manner that complemented the content of the app, or tweak the pace of the narrative, and the size of GPS zones.

As the majority of the audience for the apps would not have prior experience of locative media arts, there was a risk that they may give up and switch off the app if it proved too confusing or does not work accurately. Therefore it was important that the artists made the usability and user interface a key focus of their app development.

The in-app instructions needed to work together with the instructions on the gateway website and the physical park signs to optimise accessibility and usability. Part of this was to identify which devices, versions and operating systems provide an optimised experience of the apps and try to make these criteria as broad as technically possible.

User testing also highlighted the kind of technological barrier that can exist in relation to downloading the apps, as illustrated by the following exchange while one of the artists was trying to help a user get started:

Artist: you need to download the app first

User: ok how do I do-?

Artist: so if you go to your equivalent of the App Store, so wherever you get apps from... Android Market? App store? It’s a Windows phone

User: I might have to set up an account, I don’t use apps, I only use my phone for texts and calls

Artist: do you not have any apps?

User: I don’t use them

This kind of technological barrier is something that the park signs will have to mitigate as a first point of information, followed by clear instructions on the landing page and in-app.
Another user described themselves as ‘not very technologically minded’, and it is fair to assume that many of the regular park users would self-assign to this category due to their familiarity with new technology, so to maximise the audience, the level of usability needs to take into account those for whom mobile technology and app downloads are still a novelty.

Feedback from inexpert users testing the apps included some very positive reactions, which highlight that audiences that have never come across locative media arts can be quite enchanted by the experience. For example, one user reflecting on her experience of Jamie Gledhill’s Talking Trees app, said:

“It was great, yes it was a lovely experience … you know, the first time it happens, it really, really does, you know, it really does charm you, so the initial first tree, it’s like “wow, this is brilliant, what a great idea! […] it definitely enhances the experience of the park, trying to identify the different trees is always nice, “oh I know which tree that is!”

Another user appreciated the interactive nature of the experience:

“I’ve never experienced anything like it before […] this is completely interactive, yeah I like it”

Users of the apps often commented on the way that using the apps changed their experience of the park and made them stop and look at features they had not noticed before, or made them see familiar objects in the park in a completely new light. For example, talking about Rosie Poebright’s ‘Take to Flight’ experience, one user said:

“Although I’m very familiar with the park and its surroundings and the trees and what they look like, I’ve never really looked up through the trees at the leaves, and the sunlight coming through, and the cedar trees and the different layers of branches […] it makes you very aware of just you and the park, and no one else”

Locative works have the potential to enchant, to encourage engagement with the environment, and to enact moments of play, for adults as much as children, as the following interview exchange with a user exemplifies:

Researcher: and how did it make you feel about the trees?
User: [laughs] well they are alive aren’t they, they’ve got their own characters if you understand what I mean

Figure 12: User testing one of the NetPark apps

Building new audiences

In terms of audience experience, clear strengths of locative works in a park are how they facilitate changing people’s experience of the park, how they encourage engagement with the environment, and how they invite playful interactions, as illustrated by the research material. These features of locative art can work particularly well in engaging new audiences, audiences ‘found’ in the park, rather than in the gallery or a museum. Poebright, one of the artists commissioned for NetPark discusses how “the audience is potentially so much more diverse and interesting because of the people who use the park” and that “there are so many more ways you can interact with the audience that are different from a gallery because it’s such a public space, where non-art gallery going people are”. For the NetPark process, the park setting requires a different engagement with the audience/user and this addressee thought the inclusion of physical signage in the park (see above). “So the challenge here is not getting people through the door but getting people to consider downloading something on to their phone and trying something for half an hour” (Poebright). Further research around the user experience will take place once NetPark launches to the public in October (after this report is published).
Making Educational Works for NetPark

Educational results in response to the third research question for NetPark - How can local schools be involved in the creation of digital story apps aimed at children? - are presented in this section. Educational users are already evident in the park. Schools use the park for studying nature, running, football and a variety of games. NetPark introduced another layer of activity, which in turn could augment the present activities. The use of Calvium’s Story App development tool could for example be used for data collection in public space in curriculum-based learning. Children use digital tools with an eagerness and transparency that previous generations find novel, however we can imagine that the use of digital equipment will become more and more evident as part of the user’s experience of everyday life.

Figure 13: School children at NetPark workshops

The following sub-sections show how in creating educational apps for NetPark, children were involved in the storyification of a public space, how they co-created with technology, and how this enhanced their experience of the park.

The storyification of a public space

The writers and illustrators worked with project developers to devise new stories and illustrations. Lesson plans were created in advance to focus the project work. Children attending were of mixed ability and in one case were selected as being children who were ‘shy’ in class and who might benefit
from this kind of project. This was the decision of the schools involved in terms of abilities. The project teams were able to identify and apply the learning from insights and understandings as the project progressed. For example, it was commonly understood that the children enjoyed learning by drawing on iPads using the ‘Procreate’ app. Also for example, in all cases the children enjoyed having a sense of authorship over their story both in terms of plot and characterisation.

Observations of three workshops sessions were conducted with the first school, Chalkwell Hall Junior School, followed by recorded feedback from the group, and individual interviews with three pupils and the teacher. The teachers from the subsequent four educational projects were asked to complete a feedback questionnaire, and the workshop leader provided feedback from the pupils. Key themes emerging from the observations, interviews and feedback are elaborated on below.

**Overview of educational workshops**

<table>
<thead>
<tr>
<th>Schools</th>
<th>Dates (2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chalkwell Hall Junior School</td>
<td>03 Feb – 24 Mar</td>
</tr>
<tr>
<td>Westborough School</td>
<td>14 April – 9 June</td>
</tr>
<tr>
<td>St George’s School</td>
<td>21 April – 16 June</td>
</tr>
<tr>
<td>Milton Hall School</td>
<td>13 May – 1 July</td>
</tr>
<tr>
<td>Thorpe Greenways School</td>
<td>11 May – 6 July</td>
</tr>
</tbody>
</table>

**Creating with technology**

For the children, aged 11, taking part in the educational projects, one of the primary elements they were excited about was working with iPads and apps. The pupils used the app ProCreate, that allowed them to import a photo taken in the park, to which they learned to add image layers and drawn illustrations. Although the pupils had used iPads before, and many had access to them at home, using them in a creative arts context was a novelty.
The teachers agreed that the pupils had quickly gained confidence in using the creative apps and enjoyed working with all the elements of the iPad.

Responses from the pupils themselves also highlighted their excitement at working with creative technology. For example, pupils said:

“I thought it was really fun because you get to learn new things and you’re not learning exactly the same as what you’ve learned before, and it’s different because I only knew how to do art with a pencil or paint but now I know how to do digital art” (pupil from Chalkwell Hall Junior School)

Some pupils even stated that using the ProCreate app had led them to use a broader range of apps outside of the learning environment. The stories the children created were developed into apps using Calvium’s platform AppFurnace, and staff from Calvium gave the children a demonstration of how it works. In her interview, one pupil from Chalkwell Hall Junior School said she was impressed that you can “do many things with just one app”. As such, it was clear that the educational projects opened the children’s eyes to what can be achieved with mobile technology and increased their confidence in using it both within and beyond the educational context.

**Children as co-creators**

The educational projects were guided by the aim that the children would be engaged as active co-creators of the story apps and the emphasis on the children’s creative autonomy was one of the most impactful aspects of the projects. This was expressed in the interview with the teacher from Chalkwell Hall Junior School, who said:

“it's not like they've been told this is what you have to do and this is the expected outcome, what's been lovely is that.... they knew what the brief was, but they have been allowed to give their ideas, they've appreciated the fact that they've had some sort of ownership over the story”

Similarly, the teacher from St George’s School said in her feedback that it was valuable that the children had been encouraged to actively explore the park and use the physical setting as a springboard for their imaginations:
“The course has encouraged them to look at everything around them, ask questions, make up stories, use what they have seen or done. I am hoping this will overflow into all areas of their studies” (Michelle Copeley, teacher at St George’s)

The teachers felt that the opportunity for the pupils to exercise their imaginations, their creativity and their team-working skills had been particularly valuable. The children, in their interviews, also impressed that they felt ownership over the new knowledge they had acquired, and that this has opened their eyes to the possibilities of digital media in public spaces, as illustrated in the following quotes:

“like AppFurnace, you can do so many things, like make a story in places, so like say for example if you went to the London Eye, it can have a story there, if you make a story out of it, so now I know that, I can do it” (pupil from Chalkwell Hall Junior School)

“It’s helped build my imagination, art skills and story writing and when I get home I’ll continue to go outside in my garden and the park and write stories” (pupil from St George’s School)

The team-working aspect was also important and something pupils enjoyed, building their confidence in group work.

**Enhancing the experience of the park**

The responses from both the children and the teachers emphasised the potential of locative media to enhance their engagement with the physical setting by unlocking another layer of experience. One pupil from Chalkwell Hall Junior School described locative media as ‘magical’, and other pupils said that it had brought the park alive, and that they were looking forward to sharing this new opportunity for play with their friends. Some pupils expressed the sentiment that they were at an age where they felt they were ‘outgrowing’ the park, in the sense that they were too old for the playground but just walking around seemed boring, so they thought the story apps would provide an exciting new activity, as exemplified in this quote:

“I thought parks were just really for children, it can sometimes be really boring if you’re just walking around, but actually I found it
quite exciting, and I didn't think this park could actually make a story or anything like that” (pupil from Chalkwell Hall Junior School)

The NetPark Toolkit

This section contains results concerning the fourth NetPark research questions: How can these insights translate into a toolkit for future use by other institutions? For this, the results of the research were shortened and published as a separate resource (Behrendt et al, 2015, http://www.netpark.zone/toolkit). The NetPark toolkit contains guidance and resources on the process of commissioning, producing and maintaining both locative digital art works and locative educational digital works in public outdoor spaces. Using the toolkit to create a NetPark could be of interest to institutions considering to offer non-commercial arts experiences in public outdoor places, such as cultural or educational institutions with (access/adjacent to) outdoor spaces, those who own or maintain parks (e.g. local authorities, museums or libraries), heritage sites, festivals and events, members of the National Trust and National Parks.

The toolkit comprises seven NetPark tools:

- NetPark Map Tool
- NetPark Audience Journey Tool
- NetPark Stakeholder Map Tool
- NetPark Stakeholder Plan Tool
- NetPark Audiences: Building Personas Tool
- NetPark Audiences: Empathy Mapper Tool
- NetPark Timeline

- Plus 12 different key issues to consider. Each key issue lists a selection of relevant tools that can be used for considering the key questions listed for the issue.
Insights

This ‘insights’ section of the report gives brief answer to the first three research questions. The next section, titled ‘future’, responds to the overarching research question and research question four.

Insight 1: Stakeholders and Actions

This gives an insight to the stakeholders and actions involved in creating an extensible and dynamic mobile/locative art experience in a public park.

Stakeholder engagement is critical to establishing momentum going forward, particularly in a public space like a park. The planning phase used for NetPark in Chalkwell Park involved a wide range of contributors. This included artists, designers, musicians, computer engineers, park managers, teachers and the general public.

Events with stakeholders are important for the NetPark process and they allow bringing in expertise and scoping out problems, including technical challenges and the approach to commissioning locative artworks.

For NetPark, a key outcome from this process was the idea of joining up experiences, both physical and digital. The design approach therefore moved towards connecting wi-fi, physical signage, digital gateway, website and commissioned works as apps and web projects.

The bigger picture around the opportunities of the Creative and Digital Economy on one hand, and the challenges around public spaces and parks on the other hand is also crucial when considering the stakeholders and actions of the NetPark process. The pressure at local government level to be more entrepreneurial has in turn increased pressure on public places. Nesta has carried out a study ‘Rethinking Parks’ looking at this issue [http://www.nesta.org.uk/project/rethinking-parks]. Within the UK there are a number of agencies developing digital creative media projects, as well as commercial developers (e.g. Arts Council England, Nesta, Innovate UK, Art and Humanities Research Council (AHRC). Also within the UK, Local Economic Partnerships are beginning to develop creative industries programmes, recognising the importance of the creative economy.
Insight 2: Building New Audiences

This insight shares how audiences responded to the new artworks created. The NetPark research of the user experience has shown how locative works in a park invite playful interaction, encourage engagement with the environment and change people’s experience of the park. This is particularly important when engaging new audiences, audiences ‘found’ in the park, rather than in the gallery or a museum.

Encouraging existing park users to engage with NetPark therefore has the potential to build new audiences. This could be an audience with socio-demographic characteristics that would not usually engage with ‘art’ or ‘educational’ experiences and might not have much prior knowledge of these. Considering users of the physical public space and users of the digital spaces (Wi-Fi and mobile phone) could be understood as key aspect of developing new audiences for arts and educational institutions. The data collected about the users of the Wi-Fi and the apps can assist this process and provide insights into these new audiences.

Insight 3: Educational Opportunities

This insight shows how local schools can be involved in the creation of digital story apps aimed at children. Locative media offers an opportunity for arts organisations to explore new ways of working with children and educational institutions. The educational part of NetPark comprised the creation of a series of ‘story apps’ where school children have worked with writers, artists and illustrators over a series of sessions. Working with primary aged children offers a broad cross-curricular experience for the student. As information technology widens itself away from basic business IT software packages, creative technology offers children and teachers the opportunity to work on longer range projects that cover literacy, numeracy, coding, visual thinking, geography and use of software. Children worked with a mixture of traditional materials and digital devices gradually developing an understanding of narrative (set in the park), use of software and illustration. The potential to work with artists creates a sense of moving from ideas and playful devising workshops into the development of a professional product. In particular children gain insights into how traditional processes (painting and drawing) can be transferred into digital processes (coding and software).
Above all this gives participants a strong sense of a continuum of creativity across a spectrum of processes, with similarities to the creative industries workplace.
Future

In this section, we consider the role of NetPark for the changing relationship between public parks and digital art, the issues related to maintaining such digital arts collections (in response to the overarching research question), and the future potential for replicating the NetPark project in other locations (research question 4).

Figure 14: This overview of key NetPark features and issues forms part of the NetPark Toolkit

The potential for digital arts parks

In the digital era, the nature and uses of municipal spaces are transforming. Memorable locations, favourite places, and our everyday leisure spaces are increasingly connected to digital networks of work and play. In this way, our everyday spaces are progressively hybrid, and this opens up new ways to engage increasingly sophisticated audiences that expect entertainment and information at their fingertips.
Offering free Wi-Fi in parks and commissioning locative art works for public spaces is something that has already been taken up elsewhere. However, Metal’s NetPark illustrates that there is more to be developed around digital arts in parks if the relationship is taken beyond the one-off installation model, which has been commonly adopted so far. NetPark as a permanent ‘digital sculpture park’ has the potential to create new kinds of connections between people and the park, and play a part in community building, as well as work to promote the value of digital arts, on a broader scale. Locative arts can play an important role as alternative to the increasing privatisation of public spaces in the name of ‘Smart Cities’ or the ‘Internet of Things’.

As we have discussed above, NetPark creates wider stakeholder interests, and has the potential to connect to tourism and leisure, and wider place-marketing agendas. There is also great potential to branch out into various outreach activities and interventions, such as participatory programmes for vulnerable local populations. This is something that Metal is already developing in partnership with Southend-on-Sea Borough Council for a permanent programme for those at risk of low level mental health issues.

Curating and Maintaining NetPark(s)

While NetPark offers a low impact extra layer to the park, many of the maintenance issues associated with art in public places are also evident in digital artworks. For example, digital projects - particularly apps - do not sit for evermore in digital space, they require regular updating and refreshing to work on new operating systems and avoid security holes associated with software. The average shelf life of an app might be no longer than two years before it needs significant updating. In the case of dual platform (iOS and Android) apps this commits the publisher to annual fees, as well as software related update costs. Some digital artworks might however be site specific and short term in design and this needs clear consideration at the commissioning stage.

One contingent problem with digital media is archiving ‘content’. With NetPark the commissioners have set out to encourage artists to save higher resolution files of the original creative assets. We know for example that high-resolution sound files from a cafe on London Road or the Peacock within the park may become historic pieces of information in a matter of decades. The’ software as a ‘wrapper’ will generally degrade and become
obsolete within years in the context of what most commentators describe as ‘disruptive economics’ or innovation (see Dyer, Gregerson, Christenson, 2011). While disruptive innovation and its attendant nomenclature may have become important in technological economic theories, they present real problems for arts organisation and archives. Mitigation of this is through preservation of files in common formats, encouraging open source development paths and potentially reformatting works to open systems. In this respect a project like NetPark gains longer-range value from avoiding the pitfalls of what has been described as ‘the walled garden’ - for example Apple iTunes and AppStore. A counter logic also emerges where apps and software are like magazines or blogs, there to be consumed and thrown away. However, the intention of most artists will be towards a more durable experience over a period of time. We can note however that app development sits between conventions of publishing, broadcasting and aesthetics.

The potential then for digital art collecting involves a strategy of representation of artists images, sounds and films in revised ‘wrappers’, ‘containers’ or software. In Europe, the Ars Electronica organisation leads the field in collecting the hardware and software associated with artist projects. In practice for example a net artwork from 2000s can be replicated in a gallery on the same equipment it was authored on.

There are no present plans to archive hardware and software for NetPark projects but this clearly is a subject for discussion. We remind ourselves here that the hardware and software are often not separate from the moment of authorship and furthermore may be bound more into the experience that originally imagined. In conclusion, archiving NetPark for future generations might involve the same process of preserving hardware and software.

**Rolling out NetPark in other locations**

As our report and toolkit ([http://www.netpark.zone/toolkit](http://www.netpark.zone/toolkit)) illustrate, NetPark is a replicable model for a longer-term digital art park, and has already attracted some attention from other Local Authorities, arts institutions and educational institutions in England. The model and process that we have developed can be replicated in a wide range of out outdoor spaces such as municipal parks.
At the time of writing this report Metal has been developing a second wave of proposals with artists, including a lab to devise new works. The proposal going forward is to continue to bring new works into the programme, as well as to consider the life span of the present works.

There has also been discussion between University of Brighton and Metal with a view to a similar project in Brighton. There is however no detail on this at present.

We suggest that other institutions who are interested in creating their own digital art park consult our toolkit for practical step-by-step advice on the process of making a fully connected 21st century park that offers novel and interactive experiences to a range of users.
Further Resources

Further project information

More information about the project and the organisations involved can be found at the following websites:

www.metalculture.com/projects/netpark

www.metalculture.com

www.calvium.com

www.appfurnace.com

www.arts.brighton.ac.uk

Further information about the project members can be found on their personal web pages:

www.simonpoulter.co.uk

www.calvium.com/team

http://arts.brighton.ac.uk/staff/frauke-behrendt

http://about.brighton.ac.uk/staff/details.php?uid=kser10

Tools and guidance

The NetPark Toolkit is at http://www.netpark.zone/toolkit

Further reading


http://wi.mobilities.ca/frauke-behrendt-locative-media-as-sonic-interaction-design-walking-through-placed-sounds/


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London: Nesta

artsdigitalrnd.org.uk