Media Portrait Of The Liberties: Design and Experience of a location based non linear narrative

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ABSTRACT

In this paper, we present the Media Portrait of the Liberties (MPL), a hands-on investigation of a new, digitally mediated form of narrative that makes extensive use of mobile computing technology. We position our work among other locative media project by means of differences and similarities and share the preliminary findings resulting from an extensive pilot study. MPL is an evolving collection of historically inspired stories drawn from written accounts of the rich inner city area in Dublin, Ireland known as 'the Liberties.' The objective of MPL is to provide viewers with a nuanced and evocative sense of place as they walk the streets of this striking neighborhood. The project also functions as catalyst for members of the Liberties community to contribute new stories, potentially enriching and evolving the portrait.

Categories and Subject Descriptors

H.5 [**Information interfaces and presentation (eg.HCI)**]: H5.1 Multimedia Information Systems; H5.2 User Interfaces. J.5 Arts and Humanities - *Fine Arts*.

General Terms

Design, Experimentation, Human Factors.

Keywords

Locative media, Non linear narrative, Distributed mobile stories, mobile wireless technology, Experience design, Interactive Multimedia.

1. INTRODUCTION

Why do people listen to and empathize with stories? Stories are a universal mechanism for sharing information about ourselves and others, imparting lessons, inspire and entertain people. Stories connect us to place and time, providing a significant portion of the cultural legacy that we pass on to future generations. Stories also serve an important social function as a stimulus to discussion and debate.

Because of the importance of stories to culture, new technologies are rapidly adopted for the purpose of storytelling. Cinema is probably the most prominent example but there are others, such as computer games, some of which contain relatively sophisticated narratives. In the Western world, the popularity of such screen-based media appears to almost universally have surpassed that of live performance (e.g., theatre or oral storytelling). As a result, a significant amount of the stories told now occur in the two-dimensional world of the screen rather than in a 'real' environment. Today, another technological shift is taking place, which is having an impact on storytelling: technological advances in the areas of mobile and ubiquitous computing, location-tracking systems and wireless network technology are pushing stories beyond the screen and back into the real space.

In this paper we describe the Media Portrait of the Liberties (MPL), a location-based non-linear collection of cinematic fragments proposing a new story paradigms from the design of the non linear narrative content, its production, and implementation. Our analysis of the data collected during the audience experience provides an initial set of heuristics for future mobile locative story systems.

The development of the MPL project encompassed a number of diverse activities, from the collection and production of reenacted stories in form of video clips, to relating each story to a particular location within the Liberties. In tandem with this effort, a handheld display system was developed. This system is location-aware and capable of delivering the video content subject to this awareness. The system only allows a video clip to be viewed when an audience member is co-located with the events depicted in that clip. Co-location could mean to stand in the same street as in which a family drama had once taken place or to look at the ruins of a once-grand building. In addition, an information architecture was developed, which lets the clips be arranged in a highly connected network. This structure allows viewers to experience the clips in a variety of orders, depending not only on the physical path they took through the city, but also by way of topics or plot elements that attracted their interest along the way. Plots were developed around multiple themes and characters by creating a series of narrative fragments that intersected with one another. We believe this system provides an innovative and creative artistic artifact in the form of a unique community-focused story web, and that it is of interest to both local community members and to casual visitors to the area.

2. METODOLOGY FOR STORY CREATION

2.1 Researching and reconstructing the story

The MPL content is a collection of stories based on the life and history of a community of people living in the same neighborhood. Factually based stories appeal to us as because they are directly connected with what we perceive to be real events and history. Such stories can provide us with inspiration for our own lives, prompting us to recollect anecdotes and trigger personal memories. Like a spider web, real stories lead into each other; connect characters and themes providing a natural hyperlinked structure that can be used as the basis for an interactive modular narrative.

While researching the content for the location-based narratives, we entered in contact with members of the liberties community, which contributed content to the project with enthusiasm. Local writer Maireen Johnston, with her book "Around the banks of Pimlico" [2] provided us with the material for media fragments: local anecdotes and characters described through a social and historically detailed narration, render a warm and engaging picture of the Liberties area from the early eighteenth century till nineteenth fifty circa. Leo Monhogan, a former local tourist guide, made available to us his collection of old photographs of the Liberties, while Charlie Hammond, a member of the local Maryland Residents Association, contributed with booklets and anecdotes on the history of the area. He told us stories about the Poddle, a river that runs underground through the Liberties and was the second water supply for the city after the main river Liffey. The Poddle is the reason why breweries and distilleries, laundries and weavers of silk and poplin flourished in the area producing a labor intensive and thriving industry. The enthusiasm and participation of these local people was a genuine sign of the desire of the community itself to share their sense of history through this project. Charlie commented, in one of our conversations: "Social history is rich in this area. I believe is important for this community to understand their own neighborhood. An initial set of twenty short stories were selected from Johnston's book for production. These ranged from Johnston's family stories about moving around the neighborhood to socio-historical anecdotes relating, for instance, the origins of the area and its ancient Abbey dedicated to St. Thomas.

2.2 Designing the story structure

The stories have been crafted as units of a modular structure where story fragments are interchangeable. The classical arched plot-based story structure has been exchanged for a more fragmented one where each scene is a self-contained anecdote that references a particular location in the Liberties neighborhood. This approach places fewer requirements on adjacency of story material and insures that the scenes can be experienced in any order. The resultant hyperlinked structure consists of the collection of story fragments and the different types of links that connect them. The reader can end the experience at any time, without needing the closure that is typically expected in stories that have a strong story arc. This kind of structure is designed to remain open and evolve, allowing new stories to be added at any time.

The Liberties story fragments are organized in a structure following a content model that takes into account themes, such as Guinness stories (related to the famous brewery that resides in the Liberties area), historical anecdotes, the social network of the community (following Johnston's book) and the geographical area. Variables that determine a different story experience of each audience member include the user profile and the user's position in the neighbourhood space.

MPL is grounded in a real place. The influence of this fact on a user's experience is twofold. The audience can merge the story settings portrayed in the video clips with the surrounding real space, adding it to their mental image of the story and augmenting the real space with the story's content and aesthetic. This may add atmosphere and warmth to the neighborhood, bringing it to life. Marie Laure Ryan explains the aesthetic implications of such effect in her treatment of spatial environments, in the section: linking text to the world [12]. In addition to that effect, relationships between places can be used to trigger memories of an audience member who is intimately familiar with the area, a phenomenon we were inspired to investigate after the Weirdview project [14]. The spatial distribution of the stories is used as one of the navigation criteria for the narrative, providing the readers with a map of the story space that illustrates the relation of the content to specific locations [10], as well as strengthening the spatial-temporal immersion of the audience, transporting them into the scene. Spatial-temporal immersion takes place when the distance between the position of the narrator and his/her audience, and the time and place of the narrated events, are reduced to near zero [15]. We believe that by placing the story fragments in the location where they happened and allowing the audience to experience them there, we reduce that distance and increase spatial-temporal immersion.

2.3 Production Phase

A variety of methods were employed in the production of the stories, according to their different characteristics. The stories ranged from ghost stories over descriptions of architectural changes in the area to individual portraits of local characters. In creating the audiovisual media segments we used a mix of video, animation and photographic media and a narrating voice that related the anecdotes in the first person (which coincides with that found in Johnston's book).

Film sets were staged around the Liberties area. Stories were reenacted using costumes and in settings inspired by the descriptions in Johnston's book. One of the most interesting sets was the reinterpretation of the traditional music session that took place every Sunday in "Mickey Murphy's Yard" during the 1940s.

Fig. 1 Set for the filming of "Mickey Murphy's yard" story.

The traditional musicians played in the courtyard of the Pimlico cottages for an afternoon. Local people came along and engaged in the action, participating as local characters in the filming. The session itself was also an opportunity to informally chat to locals about the project and verify their enthusiasm for providing new content to the story collection, reviving memories, anecdotes and a sense of pride of being from the Liberties area.

A different kind of story, referencing buildings that do not exist anymore, were produced using photographical material collected during the research and some of the watercolor sketches produced for the storyboarding process. The varied methodology added expressivity and freshness to the media pieces, and highlighted some ideas for how to develop a framework under which to guide the community members in the feedback collection phase, when they will be able to provide and produce their own stories to add to the collection.

2.4   The MPL interface

In parallel with the MPL content we developed an interaction strategy and a graphical interface between stories and its audience. The MPL interface takes the form of a digital interactive map displayed on a handheld mobile device (iPaq). Adopting an iPAQ as our delivery platform - a device that had to be explicitly rented or requested in order to try the experience - was a design choice made in order to stress the uniqueness of the experience. By ensuring the project was only available under certain conditions and for an already interested audience, we were able to make the experience more akin to attending the theatre or visiting a gallery than more casual activities like watching TV or surfing the web. Through the purchase of a ticket and allotment of time to dedicate to the experience, an audience member chooses to engage with the project and pays a deeper, more focused attention to the work. If we had made the project available for mobile phones and other more popular and widely available mobile devices, we expect it would have become more accessible but not necessarily more appreciated.

To help users locate the story content on the digital map and orientate themselves in the real space and in relation to the stories, we designed a series of graphical navigational aids as part of the graphical interface (Fig. 2). The navigational aids can all be switched on or off depending on the degree of randomness the user whish to integrate in the experience. The more aids are turned on the more the user is guided through the Liberties tour. The less aids are visible the more the experience will feel like a free exploration of the area where the audience can stumble upon story material unexpectedly. In the following paragraphs are a description of these aids, their form and rational.

The **digital map** appearing on the iPaq screen is hand drawn version of a map of the area. The hand drawn look is meant to give the experience a different feel from a tourist guide or a more commercial application. Colors have been chosen not to interfere with the rest of the aids and give a pleasurable tone to the interface overall. Names of the streets are marked and readable. The map is manually scrollable, so that the audience member can look around the map for stories that are beyond the area where he or she is located. This design choice, as opposed to a map that automatically re-centers around the users current position will give the audience member the opportunity to explore the rest of the neighborhood map, looking for pointer to story material.

The radar. it's a grey rectangle at the bottom right corner of the screen, showing the total area covered by the map. Within it, a smaller rectangle indicates the portion of the map shown on the screen at any one time. A red dot, informed by the GPS readings shows where the user is situated in relation to the whole map. The smaller rectangle moves as the user manually scrolls the map to look for further story indications.

The user position indicator. A circular semitransparent circle of around 10 pxl of diameter indicated where the user is positioned at all times on the map. It is informed and updated by the GPS readings every few seconds. If clicked, it will bring a screen dispalying the user history all the stories viewed so far in the form of story icons. If the icons are clicked they will replay the story clips, even if the user is not in the appropriate location where the stories happened.

Colored markers indicate the accurate position of each story on the map. They are in the form of small green square dots.

Story icons. The story icons are small representative frames extracted from each story that will appear on the map when the story has been found (when audience and story location coincide) or to indicate stories that relate by theme or character to what has just been viewed by the audience member. The icons are complemented with three smaller square symbols each, located in the rightmost side of the icon.

Fig. 2 Graphical interface screenshot, showing: the map, the radar, the green dots, the story icons and their related symbols

The play symbol. This symbol indicates that the story is available to the audience, in range with the user location (meaning that relates to the location where the user is situated) and viewable. By clicking on the icon the video clip of the story will play full screen and when finished the interface will return to the digital map. The icon will then report a second symbol: a small ticked sign to indicate that the story had been viewed.

In addition to the fully visible icons, there are the semitransparent icons. They display on the top right corner, a symbol with three small footsteps. That symbol and the semi transparent quality of the icon indicated that the story is somehow related to what has just been viewed but is situated and there fore available as a videoclip at a different location. If and when the user reaches the appropriate location, the icon will "un ghost" (become fully visible). The footsteps will be then replaced by the play symbol and by clicking the icon the video clip of the story will play full screen on the device.

We decided to stick to common sense icons instead of drawing our own personalized ones to ease the understanding and use threshold and let the audience focus on the story experience rather than the interface.

2.5 Technological implementation

MPL is running on the Pimlico software, a bespoke platform developed by Ian Oakley under the Carmen project-funding framework [4] supported by the Irish Higher Education Authority (HEA). Two versions of Pimlico exist, one for wireless mobile devices (iPAQs) and one for desktop PCs. Portable devices are the primary target platform. An iPAQ equipped with a Global Positioning System (GPS) card enables the audience to view the stories depending on the their current position on the streets. Access to the story content occurs through the appearance and disappearance of selectable icons. Each icon represents a particular story and is positioned on the digital map on the iPAQ's screen, in the location where the story is set. Once an icon is selected, the corresponding audiovisual story fragment is played full screen. At the end of the video clip the digital map of the area is returned to the screen.
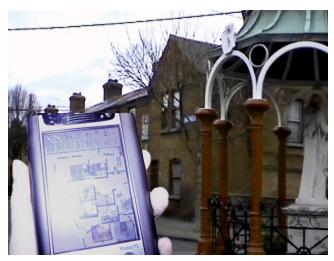

Fig. 3 Hand held device in one of the Liberties story locations

Each story clip is linked to other clips through a set of relationship between topics. This set of relationships has been modeled in the extensible markup language (XML). Four types of topics are supported: characters, locations, themes and times. These topic titles relate to the content of the stories. After a video clip has been played by the audience, all topically related clips are displayed on the map, indicating to the audience member where to position themselves to access the related content. Relationships in each of these four topics can be activated or deactivated separately. It is possible to view clips related by theme alone, or just by character and location, or by all relationships. For instance, all clips containing a character called Honora are related to one another by the character relationship set. Some of these clips also feature other characters, for instance Honora's son Michael, and are therefore also related to all clips that he appears in. When this practice is applied to all four topics, it forms a rich web of interconnections between the video clips. Furthermore, it is easy to place new content in the web as the connections between content pieces happen through meta tags describing the themes, characters and locations for each story. Each story is described by a set of keywords that link the content to other pieces tagged with the same keyword [5]. Selecting a few topics that relate to the story is sufficient to richly connect it to the web.

3. USER STUDY

The process of storytelling always involves a story, a narrator, a medium and an audience. To complete the project, a complex user study was designed to capture the audience response to the experience.

To explore and identify the initial hypothesis and issues about the MPL we defined three broad audience samples: media experts, community members and non-residents. Among the media experts featured people with experience in digital media technologies such as audio, video, multimedia, computer science from artistic, technical and educational angles. Within the community sample we had people that were born and live in the area and people that moved to the liberties at a later stage but still consider themselves members of the Liberties community. For the non-residents we sampled people from outside the Liberties neighborhood, ranging from Dubliners, to Irish native and foreigners. Among foreigners some were tourist, others were living in Dublin and others lived in Dublin but have recently moved out of the country. The broad sampling was expressly designed to capture a very wide audience and identify parameters for more focused future investigations. The methodology for evaluation is qualitative, involving observation and semi-structured interviews [13]. We studied seven cases per for each category. Their comments were recorded through a wearable dictaphone as they were touring the Liberties neighborhood with the iPAQ in search of stories. Four users from each group experienced the Liberties project in pairs while the other three toured on their own. This method was used to investigate what kind of exchanges the experience would prompt among audience members on location. As the people were walking around the streets experiencing the stories, we observed them at a distance (so as not to influence their choices), recording their trail through the liberties and writing notes about their behavior. At the end of the tour, the audience members were assembled for a focused conversation about their experience with the MPL.

Preliminary results have already shown interest and engagement with the project by all participants. Audience members from different user groups demonstrated different focuses. The next section describes the issues brought up by each audience group and the three main categories that emerged from the collected data.

Fig. 4 People experincing the MPL

3.1 Community Reaction

Community members were selected from the "Living Heritage" class organized by the local community centre of Saint Nicolas of Myra on Carman Street, in the heart of the Liberties. Following local people around the Liberties with local people was a great insight into the community atmosphere and a very different experience from observing audience members from outside the neighbourhood. People on the streets had a very friendly attitude towards other community members. Often conversations with passers by would start spontaneously in the street with topics ranging from questions about what were they doing, to updates on local news and events happening in the neighborhood. The Liberties is a disadvantaged inner city area, and it was clear that both the authors and some audience members who are not native to the area were not able to relax as much as the community members, but still enjoyed the overall experience.

Some of the community sampled participants were born in the area. All their ancestors rooted in the liberties for at least three generations. The MPL experience triggered memories and stories in all of them. An example is the anecdote about a dispensary officer in South Earl Street Health Center, who was particularly rude. People remembered him, and told us how he was still performing his job with the same rude manners portrayed in the story. Finding a character the audience members could relate to in real life, released a sense of confidence and achievement in the participants and pulled them right into the story, connecting the anecdote and the history of the place to their actual lives. Another evocative story on location was embedded in Braithwaite Street: two audience members' (Liz and Meriel) families used to live there and knew the family of the man portrayed in the anecdote. At one time, he was a familiar face in the Liberties, walking the streets selling coal from a horse drawn cart. Liz and Meriel told us that when they were children they used to play in the shed where he stored the coal, even though it was dirty and full of rats. "His hut and stable for the horse were only recently demolished" Liz and Mariel remember. Other community members on the other hand, recall him shouting: "Coal" as his horse and cart criss-crossed the Liberties.

When returning to the San Nicolas of Myra community centre for the focused discussions, members of the "Living Heritage" class would spontaneously join the conversation and contribute with their comments. The comment included stories about the poor conditions of the area in the past, and how men used to run to the pubs and bars as soon as they cashed in their salary; how women were not allowed to enter the pubs until recently, and used to have to ask a man they trusted to go to retrieve some of their husbands' money before it was all spent on drinks; how people from the area still know today which houses originally belonged to the Guinness workers and which to the Jacobs factory workers, despite the fact that the Jacobs biscuit factory is not located in the area anymore and Guinness now employs few Liberties residents. These sessions clearly indicated the interest of the community in participating and contributing to MPL expanding the story-database with old and new anecdotes about their neighborhood.

3.2 Non-Residents Reaction

The non-residents showed a variety of reactions to the MPL. A general comment expressed was that the experience was interesting because it let them roam and explore an area that they would have never have got to know otherwise. The Dublin Liberties are a famous inner city neighborhood, well known for its disadvantaged conditions and despite its great history, people would not spontaneously adventure in this area. These comments show the potential of the MPL to encourage an alternative type of tourism, geared towards areas not marked by the usual tourist trails. Many enjoyed listening to stories that would tell them about the origins, the old architectural structure and the socio-historical conditions of the Liberties. Stories about the Courthouse of the Liberties, or the Brabazon family, descended from the Lords of the area. Some of them expressed desires to know specific dates and facts about striking monuments such as the statue of the Jesus on Gray Street. John Gallagher, local community member, was present on location when Oscar, native from Cuba and living in Dublin, made the comment and was able to answer the question immediately, explaining the origins of the statue and how it used to be a fountain. This is and other similar episodes highlight how the system not only prompts memories and anecdotes about the neighborhood in local people but can also stimulate a dialogue between locals and visitors.

Some non-residents did not connect to local story characters, like Honora and her family, moving around the Liberties from house to house and job to job. They found those stories too fragmented to be able to synthesize them as a whole. Others reported the feeling of being dropped in the middle of a story, missing out in particular on the beginning. We attribute such comments in part to the fragmented nature of the narrative, but have identified a number of other possible reasons for this experience. For example, not being from the area and therefore not being able to connect the story fragments to similar stories that might have occurred in relatives' lives was also an important factor. The lack of a cultural reference frame may have diminished their interest in and capability to relate to these kind story fragments.

This conclusion was supported by comments reported from people originally from other areas of Dublin. One of them, for example, recognized that similar stories would exist even in his own neighborhood. This cultural reference sparked his interest in the adventures of the Johnston family, struggling through economic highs and lows, moving premises around the neighborhood every few years and constantly dealing with the everyday problems of health and accommodation. On the other hand, some of the non residents still appreciated the personal stories of the Johnston family. Bart, a native from Belgium, visiting Dublin for his second time just for a few days, enjoyed the Johnston's family anecdotes most. He found them warm and entertaining and was not disturbed by their fragmented nature.

3.3 Media Experts Reaction

The Media experts sample having very different areas of expertise's focused on different aspects of the MPL. Media experts with technical background were focusing on the GPS performance and software capabilities, while some multimedia experts would find the technology even if simple enough to use, distracting from the story experience. Reasons ranged from the fact that they were engrossed in understanding the interface issues or because they were unfamiliar with the Liberties neighbourhood and therefore the navigation of the real space was a demanding task. Rainer, a German writer with multimedia experience, felt the stories were too fragmented to form a coherent narrative structure, especially if considered from a classical narrative point of view.

He found the underlying narrative structure too weak to form a coherent story and reported that the characters lacked motivations and psychological depth. Users more familiar with the fragmented nature of many interactive narratives, such as two former colleagues from Media Lab Europe, found the fragments pleasing and reported that the relationships between the fragments were engaging and motivated them to seek related story fragments. We can infer from these comments that the audience engagement and relative success of the non linear interactive aspect of the stories is highly dependent on the person background and disposition towards alternative story structures, compare to more traditional forms.

A few observed that the link between a story and a specific location was not always obvious. Audience members from other user categories reported this comment too, but the media experts were able to articulate more complex analysis and to suggest solutions of the phenomenon. During the observation we noticed that due to the GPS resolution (approximately 10-15 meters), the audience was not always situated in the right physical location when a story was available to them. Also their position in relation to the space varied from the side of the street they walked on, which way their gaze was directed and weather they stopped to view stories fragment, or kept walking. Furthermore, it was noticed by the users that the audiovisual media fragments did not always provide precise pointers as to their setting.

4. PRELIMINARY FINDINGS

From the data collected during the interviews and observation of all three different users groups, three main categories of comments emerged: observations regarding the stories, the interface and the technology used.

4.1 Story design
The modular structure of the story collection evoked different responses. Some people really enjoyed the fragmented nature of the narrative and found it engaging and challenging, motivating them to find more story parts to complete the picture, and confronting their notion of traditional narrative structure. Other users found the fragmented nature of the narrative confusing and frustrating. These users expressed a desire to be able to experience the fragments in a more linear, traditional way. A timeline was also proposed, to facilitate to experience the stories in chronological order. There were also comments about the simple treatment of the characters. The main suggestion for strengthening the characters was to have them introduce themselves and contextualize their position in the Johnston family, informing the audience in which relationship they stand to the narrator. Unfortunately, this was the approach that was actually implemented in the project. The narrator, who adopts the point of view of Maireen Johnston, the last surviving member of the Johnston family, talks in the first person and specifies the relationship of the characters to herself. For example: "Honora, my great, great, grandmother used to live in Pimlico…". From the comments we received, it is clear that this technique proved to be insufficient to describe the complex web of Johnston ancestors who feature in the story fragments. Furthermore, the relationships among stories were not obvious to everybody. Suggestions to strengthen these links ranged from displaying trails on the map to highlight continuity between stories' themes, to using the narrator to explicitly make connections with other stories and to pass on suggestions as to where the audience should go next to collect related stories. Furthermore, as briefly mentioned in the media expert section, people did not always find the story obviously linked to its relative location. Suggestions on how to solve this issue included starting each video clip with an image of the location to which the story relates, instead of having the location visualized somewhere in the middle of the clip, according to the demands of the story being told. Another suggestion was to use the narration to direct the audience's gaze in the appropriate direction. For instance stories could commence in the following style: "Can you see the red brick building opposite South Earl Street no 8? That used to be the local Health centre." By explicitly naming and describing the important locations, the audience would familiarize themselves with the setting before the beginning of the story, without missing on the visuals nor feeling confused about what they should be looking at.

The stories were portrayed in audiovisual format. People generally enjoyed the visuals and the mixed media style used in the production, from the reenacted stories, to the old pictures representing the area as it used to be, to the use of watercolor sketches extracted from the storyboard.

Fig.5 Frames from two different stories videocilps.

People often commented they had to look at the video twice as the richness of the media would be overwhelming combined looking around the real place to make contact with the surrounding architecture and locate where the story related to. Only one person though, reported that he would have preferred to experience the MPL just as audio narration.

The audience also commented on the different type of voices casted for the narration, some people connected with one narrator more than another, to the point of really not enjoying some stories because of the narrator voice or accent. Generally though, the fact of having multiple voices for different stories type was appreciated.

4.2 Interface design
The interface was reported easy to understand and to use. Users appreciated the hand drawn map we adopted which made a clear distinction between our project and a tourist guide. The map had to be manually scrolled, which was lamented as distracting or confusing by some. As the user position would sometimes fall out of the screenshot of the map. Suggestions of automatically re-centering the map around the user were proposed. On the other hand some users appreciated the manual scrolling. They commented that it allow them to explore the whole area and look for related stories that might have not been located in the same map portion shown on the screen. This was actually the reason why we avoided the automatic re-centering of the map design.

The navigational aids such as the radar view and cursor indicating the users' position on the map following the GPS readings, were also useful and easy to understand. The markers that indicated the presence of the stories (The green dots indicating story presence

in the area and icons indicating stories video clips) prompted a range of responses. A frequent comment was that the dots that show story locations on the map could have held information. For example, dots of different colors could be used to illustrate whether stories had been previously viewed or not. Many people were unable to remember which stories they had already seen, even when they returned to a previously visited location. Another frequent comment was that the icons that appear on the map to indicate story availability were too big. They "cluttered" the screen rather than offering useful information, limiting the visibility of the map and were of little descriptive value. This comment was expressed by a high number of users. The majority commented that they would like to be able to switch off the icons in order to be able to see the map more clearly. However, one user offered a contrary opinion, He reported that he really enjoyed the icons richness, and found them colorful and pleasant.

Some users suggested to design pre-tested trails on the map to suggest thematic tours or encourage to follow the characters of the anecdotes, or time based trails so that people could choose in relation to the time available to them.

4.3 The technology

The technology used for the MPL (GPS-enabled iPAQ and the Pimlico custom made software platform) proved to be both simple to interact with and reliable. This is an important conclusion, as some of our target audience has limited experience with computer technology, and we though would not engage with the project because of some form of technophobia. The simple interface we developed plays a considerable part in this success.

The choice of an iPAQ for the experience was very successful. As a miniature portable cinema screen, the iPAQ delivers good quality audiovisual media that allowed the audience to engage with both the audio narration and the visual interpretation of the story.

The fact that locations were not always immediately recognizable led to a mixed response. Some audience members were curious, others frustrated. The problem can only be partly attributed to the resolution of the GPS technology. Specific filming and narrative techniques (As explained in the section on the story design) could be combined with technologies which offer more accurate localization, such as Bluetooth beacons or RFID tags to ensure that stories can only be retrieved in the exact locations they related to.

The smoothness of the technology performance on the hardware and software side made it easy for most audience members to focus on the stories. Understandably, people unfamiliar with the area had more difficulties. Rainer and Sara, a German and an American who had been living in Dublin for about six months found it hard to navigate around the new area, relate to the stories and the real locations simultaneously and coordinating where they had already been with where they wanted to go next.

It is interesting to note that media experts and non-residents at times could become engrossed in or distracted by the system, but the Liberties community members immediately focused on the content.

5. RELATED WORK

Location aware applications in the form of art works, games, tourist applications and services are flourishing in different domains, from art and media to computer science. As we were developing the MPL a number of related projects were released. Excluding indoors experiences and mobile interactive tourist guides, we are tracing a far from complete overview of related and similar projects that deal with distributed media in the cityscape.

From Janet Cardiff CD Roms based audio tours [1] to Teri Rueb, GPS driven audio installations [9], Murmur [6] and "North by North West" [4] locations and stories have been successfully paired in evocative artistic experiences, using audio as their main expressive channel. With MPL we take a similar approach adding another layer to the experience: authored story content incorporates cinematic media as well as narration in the mobile distributed story experience.

On the games front, in the recent years, the artists group Blast Theory [1] and the Nottingham Mixed Reality Lab [8] have collaborated in creating a compelling series of location based games where onstreet players are combined with online players collaborating together in the pursuing the game goal through navigating the cityscape.

With MPL narrative content, relating to the community that inhabit the location where the stories are available, is embedded in the neighbourhood. While this approach engages its audience through a "treasure hunt" feel for stories, the overall goal and experience is radically different.

On the authoring side, Urban Tapestries [6] is an ongoing research carried out by Proboscis creative studio, that started at the same time as the MPL. Urban Tapestries provides its users with the possibilities of annotating real space with digital content on the move. On the other hand, the MPL focuses on providing the audience with authored cinematic short stories, and a location based non linear story experience.

Furthermore, so far, not many distributed mobile applications conceived as art works incorporated an evaluation method to bind the audience reaction to the process. We believed that in particular in the case of interactive narrative artworks, the audience is an active element of the equation, therefore we propose a new approach to interactive narrative projects that include a detailed and extensive user study as part of the artistic process.

6. CONCLUSIONS AND FUTURE WORK

Through this initial broad user study, we have established that the project succeeded in enhancing a neighborhood by making stories about the area available to the public in the places in which they are set, through a mobile location-based narrative system. As a an indication of the overall MPL experience success, we can confidently state that all people who participated in the user study confirmed that they would like to have similar experiences available in other cities or in their own neighborhood.

Most people agreed that the MPL experience added atmosphere and warmth to the neighborhood and the fact that the stories were experienced in the place were they once occurred, did help achieve a sense of immersion in the stories in general. Most

audience members felt totally engrossed in the experience, forgetting the time factor and that they were being followed as part of the user study procedure. Audience members reported that they moved from one story to another, from one location to the other totally immersed in the experience interrupting it only because of technical problems (such as the GPS inconsistencies or battery shortcomings).

For community members in particular, the experience was twofold. On one hand they were able to discover new stories and anecdotes about the history of their neighborhood, a process they found extremely rewarding. On the other hand they were also prompted and stimulated to recollect and tell their own stories about the area. Furthermore, in several occasions, conversations and storytelling were prompted among audience members and locals. From these preliminary responses we can see the project successfully functioning as a catalyst for community awareness and the recollection of individual memories that could comprise a rich social history.

The stories, in form of cinematic narratives, were highly appreciated even if sometimes perceived as overwhelming to take in at once with the surrounding cityscape. The issue was usually overcome by looking at the video more than once or repeating the tour. The interface design was generally felt to be intuitive and easy to use. The navigation aids were all useful but the dots and icons indicating story availability could have been more informative to avoid involuntarily returning to already visited locations.

Through this first broad and detailed user study major strengths and weaknesses of the work have been identified and explained. It is clear that the MPL approach has potential for enhancing spaces, transforming them into something richer for both community members and more casual visitors. A strong positive feedback from the community itself showed potential in the direction of community storytelling and the recollection of memories by local residents.

Story sharing and empathizing though has been a reaction expressed from all sampled audience members, demonstrating the importance of stories in our culture and the need to continue to engage in combining narrative tradition with emerging technologies. Our future work points in the directions of further investigations in location based mobile story systems for urban spaces. Important findings on the story and interface design have been uncovered and will be extremely useful in the implementation of future locative media projects. At the moment we are carrying out a second user study encompassing community members with strong links with the area, Dubliners and foreigners living in Dublin. With this second study we are looking for similarities and differences in the audiences experiences, how people from a city react to mobile narratives about their own city neighbourhoods. The findings will highlight further potential and future directions for mobile location based story systems.

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