Assessing Film Heritage as a city promotion tool

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Abstract

Cultural tourists are currently looking for new destinations and experiences. The tourism industry itself is very competitive with many new destinations trying to attract tourists. Moreover, there has been an increasing number of tourists visiting destinations featured through films and television series which are not directly related to the tourist promotion of the Destination Management Organizations (DMO). This is a new form of tourism called Film-induced Tourism, one of the fastest growing sectors of the tourism industry. Recent research suggests that films can have strong influence on tourist decision-making and films do not only provide short-term tourism revenue but long-term prosperity to the destination. This paper investigates the way new experiences based on Information and Communication Technologies can enhance the experience of film lovers to destinations related to films such as San Sebastian on the basis of the CINeSPACE project. Based on the location and profile of the user, the system delivers multimedia content that best fits his/her requirements. Results of the in situ evaluation are also provided.

Categories and Subject Descriptors (according to ACM CCS): H.5.1 [Computer Graphics]: Multimedia Information Systems—

1. Introduction

Audiovisual media are a source of information and therefore, a crucial way of relation with the environment in the current society. Regardless the format, media is a massive means for the transmission of ideas, cultural identity, social cohesion and values.

On the one hand, cultural identity needs objects through which it can be perceived and traces through which its values can be expressed. The structure of these historic signs or traces in the territory is mainly the landscape, specially the historic landscapes, in which the cultural inheritance of the past is stored. However, a significant proportion of this heritage is also conserved by libraries and archives in magnetic form and according to recent estimates, the worldwide stock of audio and videotapes in archival custody is estimated to be near to nine million days. The documentary heritage in libraries and archives constitutes a major part of the collective memory and reflects the diversity of people, languages and cultures.

On the other hand, films can induce viewers to travel to the shooting locations attracted by their physical properties (scenery and landscape) and associated theme, storyline and events, shaping the feelings, emotion and attitudes of the audience towards places. Taking into account this evidence about the visual impact of a film on a potential visitor to the shooting locations, the tourist sector and Destination Management Organizations (DMO) have tried to developed specific tourist products. Therefore, it is crucial to define solid synergies between tourism and films. If tourism takes advantage of the shooting of films, the conclusion is clear: it is necessary to encourage the shooting of films and promote the local audiovisual industry. Moreover, for destinations, films do not only provide short-term tourism revenue to the destination, but also long-term prosperity.

Despite the growing interest of the Film-induced Tourism concept, it has received little attention from researchers and practitioners. Thus, this paper investigates the way new experiences based on Information and Communication Technologies (ICT) can enhance the experience of tourists to destinations related to films. Interactive specific routes through the locations where the most important films have been entirely or partially shot in a city combined with Film Her-
itage contents have been designed and implemented within the CINeSPACE project.

This paper is organized as follows. Section 2 describes the state of the art related to the new concept of Film-induced Tourism, describing several examples worldwide. The following section presents the CINeSPACE project, the framework in which this paper is based. The real evaluation of the experiences developed within the project in the city of San Sebastian is described in Section 4. Finally, some conclusions are withdrawn.

2. State of the art

2.1. The new concept of Film-induced Tourism

Although there has been an increasing number of tourists visiting destinations featured through films and television series which are not directly related to tourism promotion campaigns, the relationship between tourism and feature films is a relatively new field of academic study [Cou98]. This phenomenon is called Film-induced Tourism. It has been defined as tourist visits to a destination or attraction as a result of the destination being feature on television, video or the cinema screen.

This new niche for tourism is one of the fast growing sectors of the tourism industry due to the growth of the entertainment industry. Hottola [Hot02] states that popular films have caused certain things to happen within the everyday scene of tourism, as they impact extensively on a screened location not just during production but also after the film has been released. To date, the influence of film on tourism has been evident at film sites globally mainly through referring to changes in visitor numbers following the release of a movie. However, this has only been established anecdotally and has yet to be empirically measured.

Having revised the literature, it was found that the state of the art related to the concept of a Film-induced Tourism is scarce. Riley et al [RBV98] analysed the changes in the number of tourists to ten former film sites in the United States. They concluded that the attractive qualities or sight/site properties of a screened location that induce people to travel to it are as diverse as the films in which they are depicted. Busby and Klug [BK01] studied the visitor profiles in Notting Hill, London.

Kim and Richardson [KR03] analysed how Before Sunrise filmed in Vienna and Groundhog Day filmed in Pennsylvania can influence the perceptions of a place of the tourists. Hudson and Ritchie [HR06] examined the impact of the Mandolin of Captain Corelli on the Island of Cephalonia in Greece. Iwashita [Iwa06] surveyed the impact of UK popular cultures on Japanese visitors to UK. Carl et al [CKS07] explore the motivation, expectation and satisfactions of landscapes from tourists at the location of Lord of the Rings. Recently, research related to Asian films by Kim et al [KAL+08] initially investigated the impact of Korean drama series in reducing tension and mistrust between Japan and Korea.

2.2. The Film-induced phenomenon in the world

Film-induced Tourism effects have been witnessed in a number of locations world-wide. Film is one of the elements of modern culture where people attend as a type of leisure activity [KR03]. Although it is quite rare that film makers intend to advertise a shooting area as a tourism destination, locations filmed as part of film and television programmes are likely to see increases in the appeal of those destinations. This section briefly describes several examples of such phenomenon in the world.

One of the outstanding examples of this phenomenon is New Zealand, with a huge increase in the number of tourists after the Lord of the Rings [SB04]. The increase in tourism incomes has been estimated as a 7 per cent in 2001 and the tour operators increased their sales over 20 per cent two weeks after the film was released during January 2002. By the end of 2002, this figure had doubled as the tour operators have sold twice the expected tours called Follow the Fellowship of the Ring. The tourist sector estimates that the trilogy has incremented the flux of visitors in more than a 30 per cent in a stable way. Thus, the film is still used by all of the DMO of the country and the tour operators within their promotions and web sites.

In Europe, Britain has been conscious that films are a showcase of the history, monuments, coasts and cities, and can attract visitors to Great Britain. London Overseas Visitor Survey in 2001 showed that about 2.5 per cent of the visitors of London mentioned English films and series as one of the major attractions in order to visit the city. This percentage is similar to the one of business tourism. Anyway, one of the most relevant examples of the impact on British tourism has been the shooting of the series of Harry Potter. Figures of visits to the Castle of Alnwick have doubled from 2001 to 2002, with an increase in Japanese, American and German visitors and families with children.

Moreover, it can not be denied that France and specially Paris have been the scenarios of several films. Some time ago, the Major of Paris created a special department in order to promote Paris as a shooting destination for Hollywood productions, which would increase the number of tourist in middle term. The surveys were clear in this issue: 60 per cent of the visitors to Paris (16 millions in total) affirmed that they have chosen their destination as they have seen Paris in the cinema. However, past experiences can not be compared to the Da Vinci Code cinema version. In order to maintain the fidelity with the roman, the director had to shoot inside the Ritz Hotel or the Louvre.

In the USA, a good example is the increase of a 25 per cent of the visitors to Fort Hays in the state of Kansas after
the shooting of Dances with Wolves. Moreover, the American soap opera Sex and the city is one of the examples that has become a big hit not only in the United States but around the world. Hundreds of restaurants, bars and shops featured in the film turn out to be must-see destinations for tourists visiting New York.

Finally, Mexico has developed a huge activity in order to attract shootings. One example is the impact of the shooting of Titanic in Tijuana and the nearby thematic park Foxploration has been considered as another tourist attraction. Built in order to shoot Titanic, the thematic park has become a place to visit in order to discover how some scenes were shot. The interactive experience includes visual special effects, miniature manufacturing or make-up allow visitors directly experiencing the world of film making.

It can be concluded that Film-induced Tourism can be considered a medium to communicate a wide range of cultural meanings and values. Moreover, it should be noticed that many heritage sites have been used as movie locations and therefore, gain increased popularity. Many sites have even acquired specific meaning only because a person or event featured in the media is associated with them. It should not be forgotten that all tourist experiences are part of wider processes of cultural production and consumption.

3. The CINeSPACE project

The CINeSPACE project has designed and implemented a mobile rich media collaborative exchange platform for the promotion of location-based Film Heritage [SLM’07]. CINeSPACE enables users to interact with location-based multimedia contents while wandering around an urban environment. Based on the location and profile of the user, the system delivers multimedia content that best fits his/her requirements.

Three main target groups have been defined as final users of the platform: film tourists, cinema professionals and citizens. Cities have defined the profile of their target groups (age, facilities, habits, preferences) and the methodology for providing personalized multimedia contents. Among other scenarios, interactive specific routes through the locations where the most important films have been entirely or partially shot have been implemented. Users are able to select the location by film category, historic period and director/cast.

Regarding the CINeSPACE prototype, the designed and built virtual binoculars are an innovative approach and a unique product as shown in Figure 1. A compact mobile unit has been produced for navigation and video presentation with a combination of direct view 4.5” LCD touchpanel and a 39” virtual screen offering all kind of tracking means, such as compass and GPS for wide area tracking, and inertial motion tracking support combined with camera tracking for very precise tracking. It also offers WiFi and audio features. It is a very sophisticated device with high integration level and a big number of sub-components, especially sensors.

The embedded camera allows recording and sending what the user is seeing. This information can be uploaded to a database through a WLAN hot spot or a 3G connection in order to create collaborative experiences with other end users. For example, while walking through the city, end users may see something interesting and want to record it. This new content could be a picture or a video. The system provides some annotation tools in order to introduce some key elements for further retrieval and stores it in the city servers.

3.1. Functional architecture of CINeSPACE

Figure 2 shows an overview on the CINeSPACE architecture. It consists of Rich Media Servers that provide MPEG-7 annotated content to an Adaptive Media Layer which then streams multimedia content to CINeSPACE client applications. A flexible architecture which allows decentralizing parts of the software has been selected. Therefore, there is no direct link between the Rich Media Servers and the CINESPACE client application running on the end-user devices. Instead, an Adaptive Media Layer has been defined to adapt data before sending it to the mobile application. In such a way, the system is not restricted to only serve mobile CINEPACE end-user devices.

Another further requirement of the project has been web accessibility, because much of the multimedia content retrieved is encoded in Web format. Therefore, Web Services have been chosen as the Communication Backbone of the system in order to ensure interoperability between different platforms and programming languages, with client libraries available for most of them.

The central part of the CINeSPACE system consists of the Communication Backbone, which connects end-user devices with the central Rich Media Servers and with each other, as shown in Figure 3. The multimedia content for
each city is stored in a common Rich Media Server which is accessed through a Web Service by the Adaptive Media Layer which in turn is accessed by the CINEsSPACE devices of the users. This architectural design is very practical, so content can be placed at one location, while the Adaptive Media Layer can act as a broker and be placed on different so called coin thin servers through the city. These servers only prepare the data for its delivery to a certain type of user devices. This also has the advantage to physically split traffic during run-time between direct usage of the system in a city and web access to the media content through the Web.

3.2. Performance of the system

One of the main characteristic of CINEsSPACE is the customization and personalization of contents and experiences. Users have to define their preferences in the profile since it is mandatory to have a profile per each user. First, content providers annotate all their multimedia content, including the profile of users to be related to the multimedia content. Later, the user should register into the system, defining his/her profile of preferences. Finally, both profiles (multimedia content and user) are matched within the CINEsSPACE architecture. The registration and user preferences definition process can be conducted by the Web of the city or at a kiosk in the tourist office.

Once at the tourism office or the collecting point of the device, the user logs in the system using the CINEsSPACE device. Each user has its own icon in the experience (Figure 4). In order to personalise the experience, the user can take a picture of himself/herself with the camera embedded in the CINEsSPACE device to be used as the icon for the user.

The user wanders through the city while the CINEsSPACE sensor fusion module calculates his/her coordinates in the real location. The position of the user is refreshed every five seconds. Regarding the Graphical User Interface (GUI), users are placed at the centre of the map which is adapted for them to remain always in the centre. The system also displays the existing Points of Interest (PoIs) on the map.

One of the most outstanding features of the whole CINEsSPACE approach is to guide and place users in the spot where a film snippet was shot. To be navigated to a location, the user simply clicks on the PoI on the map and then chooses the navigation icon (Figure 5). In this process, the user first receives information on where to go and where to turn once near the location. The system alerts the user when he/she is within a reasonable distance of a PoI. The PoI is identified by its coordinates and a radius around it.

Then, the user can retrieve multimedia contents related to his/her profile, both from the city providers and from other users. Once the multimedia content has been retrieved from the Rich Media Servers and sent to the CINEsSPACE device, the user only has to click on it and an easily browsable col-
lection of items will open on the touch-screen of the device, as shown in Figure 6.

After finding something that looks interesting for the user, he/she selects the content. As there are several types of contents, the system analyses the format of the content and decides whether it should be rendered on the PDA or on the binoculars. In the case of visualization through the binocular, the system alerts the user to change the mode from PDA to binocular and guides the user to the correct position and orientation. The system matches up the first frame of the selected clip with the real scene using markerless tracking techniques. Once the process is finished, the clip is rendered as displayed in Figure 7.

Furthermore, the CINESPACE system provides the ability for users to create, annotate and store several types of content on-the-move, including images, audio and video. While walking through the city, users may watch something interesting and want to record it. They only have to click on their icon to record or browse their own content. The button allows choosing the type of multimedia content to be recorded.

The user can manually annotate the generated content using attribute keywords and a personal message. If the system detects that the generated content is a video or audio, the user also chooses a language item of the list or creates a new one. Moreover, the system locates the user position and orientation in order to provide further concepts related to the geolocation to help in the annotation process. User-generated content is always stored with the position and orientation of the user. The annotated content is stored in the database of the cities. If his/her friends accept the content, this new content is also stored on the profile of his/her friends.

Finally, collaborative experience in the context of CINESPACE should be understood as sharing multimedia content and P2P communications. Usually, when users define their profile using the CINESPACE registration tool, they also select their friends to the session. In those cases, the user can chat with the list of friends or take a picture and just send it in real time, without annotating or storing it. Users displayed on the map are friends of the current user.

4. Evaluation of the prototype
4.1. Evaluation methodology
Evaluation methodology is based on qualitative and quantitative analysis of the experience. The assessment plan has been achieved by establishing the criteria against which the experience has been evaluated (Figure 8). Collected data has been processed and analysed to form a judgement over the technical performance of the system, usability aspects of the prototype and quality of the experience. Two types of questionnaires have been designed and used in the evaluation process.

- Questionnaire for the evaluation of the experience. This questionnaire is devoted to the evaluation of the following aspects by the end user: suitability of the hardware; effectiveness of the audiovisual system; suitability of the scenario for the field trial; relevance of content and services; and willingness to pay for such experience. Though primarily written in English, this questionnaire has been translated to Spanish, Basque and Italian in order to simplify the evaluation process for the users.
Questionnaire for external observers. Members of the CINEsSPACE team have joined the test as external observers, taking pictures and recording the experience as well as taking notes about the behaviour of the users, such as timing, the number of requests for support, the reaction of other members of the public to the CINEsSPACE user and the interaction of the users with the surrounding environment. The overall experience and further extensions to other film-related cities has also been assessed, taking into account several aspects derived from the answers such as quantity and quality of location-based multimedia contents; usability of the interface; or willingness to pay for such experience.

Users have been asked to provide feedback on the overall experience and make recommendations for future improvements. Before starting the experience, users were asked to sign a confidentiality agreement related to the protection of the copyrights of the contents. After a brief introduction and some instructions about the testing, users began the experience. During the evaluation, users have been encouraged to ask questions concerning the scenario and to give the first impressions related to the experience.

**Figure 8:** People fulfilling the questionnaire after the CINEsSPACE experience.

**Figure 9:** Participant during the evaluation in the front of the Town Hall.

**Figure 10:** Several contents for the prototype validation.

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4.2. Description of the trial in San Sebastian

One of the target groups of the CINEsSPACE experience are the Film-induced tourists, people that choose a tourist destination due to its relationship with cinema (famous International Film Festivals, shooting locations). As it is widely known, San Sebastian hosts the International Film Festival since late 70s. Two are the main scenarios selected to validate the prototype which are also connected to the cultural identity of the city: La Concha beach and the Headquarters of the Town Hall (Figure 9). The Queen Elisabeth the Second was the first member of the Royal Family who enjoyed bathing in the beach, promoting the city as a tourist destination.

Multimedia contents have been mainly let by Fototeka Kutxa, Filmoteca Vasca and the Town Hall Communication Department archives. As not many films have been shot in this scenario, contents were more related to the history of the city and its monuments (Figure 10). Additionally, 17 images and 2 videos have been prepared as reference images following the guidelines defined by the technical partners to test the functionality of the Augmented functionality.

18 participants were selected to take part, seven female and eleven male. Regarding their age distribution, 13 of them were 19-35 years old and the remaining 36-60 years old. Finally, the type of new technologies which users are familiar with, starting with the most popular, are the Internet, the e-Mail, mobile phones and computer/laptop, and digital cameras; then, scanners, audioguides, Computer games and PDA/palms; and finally, simulators.

4.3. Results of the field trials

In general, users were more satisfied with the suitability of the device to discover a city and its Cultural Heritage in a
more effective way and with the area selected for the experience. Several conclusions have been obtained for each of the analysed issues.

- **Effectiveness of hardware system design.** Most of the users were quite satisfied with the weight of the device, especially those who had tried the first partially integrated prototype, who really appreciated the weight reduction. Most of users also were quite satisfied with the size and shape of the prototype. However, they would like to have a smaller and lighter device.

- **Effectiveness of audio-visual system.** Almost two thirds of users were very or quite satisfied with this feature. However, the problems encountered to visualized the display correctly during sunny or clear days have biased the evaluation results. A solution should be found to this issue. With regard to the visualisation through the binocular unit, only one third of participants declared to be satisfied with this aspect. A better image resolution and better adjustments for colour should be analysed.

- **Effectiveness of software system design.** Testers were quite satisfied with the effectiveness of the software system design. The comprehensibility of the interface received some improvement suggestions for example, with regard to the lack of intuitiveness of some icons (e.g. mini-webs, binocular, video icons).

- **Suitability of the testing zone.** All the participants were very or quite satisfied with the area selected for the experience and the addition of an extra PoI was well received by the users having tested first partially integrated prototype. The duration of the experience was also well perceived by the testers and provided them the possibility of going around the two available PoIs, navigate through the map and explore the multimedia contents and available functionalities.

- **Content and services.** Two thirds of participant declared to be very or quite satisfied with the provided content in San Sebastian. Specific text information (mini webs) prepared for final users tests were well appreciated. Additional services were limited to taking photos. The majority of testers declared to be quite or very satisfied with this function even though participants had to use the icon in the display in order to shoot pictures. This function should be improved.

- **Value for money.** Questions related to future exploitation plans aroused a very high degree of satisfaction. Almost all of the participants considered the experience useful, as well as very or suitable enough to discover the city and its cultural heritage in a more effective way. Nearly all of them would like to use the device again. Although all the features of the device were not completely available, the users recognized its potential to perceive the city as more technologically advanced place.

Throughout testing, both user and observer comments were gathered, building up a picture of satisfaction with project concept and potential, current prototype status, and providing a range of suggestions for improvement. These suggestions have been analysed and grouped into similar themes for ease of interpretation and listed below (Figure 12).

![Figure 11: Interaction with the CINESPACE prototype.](image)

![Figure 12: Interaction between the participants and external observers during the evaluation.](image)
cluding the activation of the shooting button placed in the case of the device.

- Interface and content navigation. The comprehensibility of the interface has received again several improvement suggestions for example, with regard to the lack of intuitiveness of some icons. For example, the minimovie icon could be represented by the text Info and the binocular function should be represented by an icon instead of by the letter B. At the same time, some indication should be provided for knowing how to use the carousel function.

5. Conclusions

There is an increasing number of tourists visiting destinations featured through films and television series which are not directly related to tourism promotion campaigns. This phenomenon called Film-induced Tourism is one of the fastest growing sectors of the tourism industry. Its increasing popularity owes to the rise of international travel and the growth of entertainment industry. Film-induced Tourism has rapidly become fashionable since more audiences are interested in cinematographic history through actual visiting experience.

This paper investigates the way new experiences based on Information and Communication Technologies can enhance the experience of film tourists to cities related to films such as San Sebastian on the basis of the CINEspace project. It enables users to interact with location-based multimedia contents while wandering around a city. Based on the location and profile of the user, the system delivers multimedia content that best fits his/her requirements.

Evaluation methodology has been based on qualitative and quantitative analysis of the experience. Two types of questionnaires have been designed and used in the evaluation process. Several Poi where the most representative films have been entirely or partially shot have been selected in San Sebastian, complemented with historic films. The final CINESPACE prototype has been evaluated by a sample group of end users composed of nearly 20 people. After a brief introduction and some instructions about the testing, users began the experience. During the evaluation, users have been encouraged to ask questions concerning the scenario and to give the first impressions related to the experience.

Most of the participants were satisfied or quite satisfied with the area selected for the trial, as the areas were considered the most proper location for the users. Regarding the contents and services, most of the users were satisfied with the content quantity and quality, although film tourists are obviously severe judges of the quality of material available for the field trial. Finally, almost all the participants considered the experience useful and would like to use the device again to discover the city in a more effective way. The whole sample stated that would use the device again, which demonstrates the great potential of such technologies for film-induced tourism experiences.

References


