

Promotion of Accessible Tourism through digital content. A case study in the Municipality of Tomar

CÉLIO GONÇALO MARQUES

Information and Communication Technologies Department, Polytechnic Institute of Tomar,
Portugal

EUNICE RAMOS LOPES

Social Sciences Department, Polytechnic Institute of Tomar, Portugal

PAULA ALMEIDA

Social Sciences Department, Polytechnic Institute of Tomar, Portugal

JORGE SIMÕES

Business Sciences Department, Polytechnic Institute of Tomar, Portugal

ABSTRACT

In the context of the Investigation Seminar of the Masters in Digital Content Production by the Tomar Polytechnic Institute, a project was started in collaboration with the Tomar City Hall to promote digital content for tourism and to promote the cultural heritage of the city, making it accessible to everyone. Through the use of ICT, the project intends to develop interactive experiences which have an impact on the visitor, increasing his satisfaction and his potential to come back. At the same time, it tried to develop information for visually impaired people as well as for foreigners. In the first stage of the project, QR codes were developed for the main monuments of the city. Each provides a link to the history, timetable, weekly schedule, and other relevant information concerning the respective monument. In this stage, audio-guides were likewise developed and promoted on the city website. These are intended to be also distributed on

the Audite platform (online audio-guide platform) and on the monument. The use of these technologies in a variety of pedagogical and leisure activities is being considered and a pilot activity has already been developed. The second stage of the project aims to create a platform to update digital content of several online instances of the City Hall, as well as a promotional video to be broadcasted in the social media. With this project, we sought to promote and develop cultural tourism activities in the city of Tomar as well as to increase tourism accessibility so that all may have access to information regardless of limitations and knowledge.

Key Words: ICT, accessible tourism, Tomar City Hall, digital content

INTRODUCTION

The success of tourist activities is ever more contingent on processes of innovation, creativity, and the ability to generate added-value initiatives that attract tourists (Turismo de Portugal, 2015). In this context, Information and Communication Technologies (ICT) can play a major role in generating such developments (Katsoni, 2011; Usoro, 2007; Shanker, 2008). ICT's provide powerful instruments that can promote competitive advantages in terms of touristic promotion (Govers, Go & Kumar, 2007; Shanker, 2008), the strengthening of industry strategies and operations (Buhalis, 2004; Katsoni & Laloumis, 2013) and the promotion of accessibility to infrastructures, equipment and touristic services (Graham, 2013; Pühretmais & Nussbaum, 2011). It is crucial that tourist sector economic actors develop products and services accessible for all: "Customer satisfaction depends highly on the accuracy and comprehensiveness of specific information on destinations' accessibility, facilities, attractions and activities" (Buhalis, 1998).

In this sense, the use of ICT in municipal policy for the promotion of tourism has marked the attempts by local authorities to promote heritage and cultural tourism. The city of Tomar in Portugal is no exception. Conquered by the Portuguese King Afonso Henriques in 1147 to the moors during the "Reconquista", the city was donated as feudal land to the Templar Order. The Grandmaster of the order, Gualdim Pais, initiated in 1160 the construction of the Castel and Convent which would serve as the headquarters of the Templar Order in Portugal, being considered a city by decree in 1162 (Rosa, 1988). Tomar is in that sense deeply tied to the history of Portugal in the world, namely in its modern-day status as the international headquarters of the contemporary Templar Order. In that sense, the city possesses a notable cultural and natural heritage, which provides it with great potential for touristic activities, and its promotion through ICT, modernizing structures and investing in distinct offers to increase tourist satisfaction.

In this paper we detail a project designed to promote the city's heritage, in a partnership between the Municipality and the Polytechnic Institute of Tomar, which involved the creation of digital content to increase visitor satisfaction and to promote accessible tourism.

ICT AND TOURISM

There are currently 4.92 billion people using mobile devices of some sort (We Are Social, 2017) with Portugal having close to 17 million such devices presently active (Autoridade Nacional de Comunicações, 2017). It is predicted that this year Wi-Fi and mobile-connected devices will generate 68% of all Internet traffic (HostingFacts, 2016). Tourism, like other strategic economic sectors, should seek to make the most out of this technological development (Egger & Buahlis, 2008; Luz, Anacleto & Almeida, 2010; Wang, Park & Fesenmaier, 2011) since tourists bring with them a number of mobile devices such as telephones, smartphones, tablets, netbooks among others.

These devices are used in a number of different ways, from getting directions, taking photographs, obtaining information about certain locations, finding attractions, events, shops, restaurants and bars, check timetables, buy tickets, make reservations and make translations (Statista, 2014). “Mobile devices used by people when vacationing impart benefits associated with timeliness, ubiquity and convenience” (Karanasios, Sellitto & Burgess, 2015), constituting an important instrument in promoting accessibility of information (World Tourism Organization, 2013).

The importance of digital content for mobile phones, which meet touristic needs and increase their satisfaction and promote accessible tourism has reinforced technologies such as QR codes, audio-guides, digital guides, augmented and virtual reality. This project seeks to give emphasis to the first two, showing their potentialities.

QR codes is a two-dimensional code developed in 1994 by Japanese company Denso-Wave, which possesses a substantially superior capacity to conventional barcodes. This code started being applied to the automobile industry, and rapidly expanded to a variety of sectors, namely, tourism. Its scanning and translation does not require any specific equipment, being possible to do it with any mobile device (Marques, 2016). In what concerns tourism, QR codes can be used for instance in location-based services at places with historical relevance, supporting event promotion, ticket distribution and access control with a mobile ticketing service, enriching products of the souvenir shop by attaching mobile content (Canadi Hopken, & Fuchs, 2010).

Audio guides are sound files, generally in the form of MP3, which can be downloaded from the Internet or in specific hotspots, making use of wireless technology (Marques, 2016). Their reproduction can be made manually or geographically with the use of coordinates. There are inclusively some devices which already possess the audio-guides. The use of audio-guides allows tourists to know relevant locations at their own pace and interactively (Suh, Shin & Woo, 2009) eliminating many barriers such as linguistic ones. These technologies are today a reality for tourist business, constituting important tools in increasing satisfaction and promoting accessibility to information, with the Cupertino de Miranda Paper Money Museum (Porto, Portugal) providing an excellent national example.

PROJECT DESCRIPTION

In 2011 Santa Maria dos Olivais parish initiated a project that sought to create a website adequate for the use of mobile devices, as well as QR codes and audio-guides, to promote notable locations in the urban parish (Marques & Santos, 2012). With the municipal administrative reform of territorial bases, stemming from the application of Law n°22/2012 of 30th of May, the Santa Maria dos Olivais parish was extinguished and emerged as the Union of Parishes in Tomar, constituted by the former as well as the São João Baptista parish. The project was duly adapted, but new legal frameworks as well as political contexts led to a pause in the project, only being reattached in 2016 in the context of the II Seminar of the Masters in Digital Content Production in the Technology School of the Polytechnic Institute of Tomar (Marques, 2016a).

With the help of the Tourism and Culture Division of the Tomar Municipal Chambers, the project was promoted maintaining its previous objective: to promote the knowledge about the heritage of the city, increasing its visitors' satisfaction.

Specific objectives were laid out:

- To promote the heritage of the city of Tomar through QR codes and audio-guides;
- To promote accessible tourism in the city of Tomar;
- To centralize the management of electronic content in the Tomar municipal chambers;
- To publicize the heritage of the city of Tomar beyond local and national borders.

The development of the project implied two stages. The first stage has been concluded and concerns the first specific goal. The second stage implies the remaining goals and has recently taken its first steps.

FIRST STAGE OF THE PROJECT

In the first stage of the project we proceeded to create QR codes and audio-guides for the main locations of interest in the city: monuments, museological spaces, among others. The choice of these locations and their texts and images was done by the Tourist Division of the Tomar Municipal Chambers.

The QR codes were developed through the QR code Monkey tool, and possess the logotype of the Tomar Municipal chambers at the centre (figure 1).



Figure 1: QR code of the Tomar Synagogue

Through QR codes, users could consult relevant information about the space such as its history, photos, timetables, weekly schedules, amongst other relevant data. This information is available at a website (Figure 2) which can be easily updated. In this way, it is possible for the Municipality to provide updated information about spaces without the need for manual replacement of QR codes.

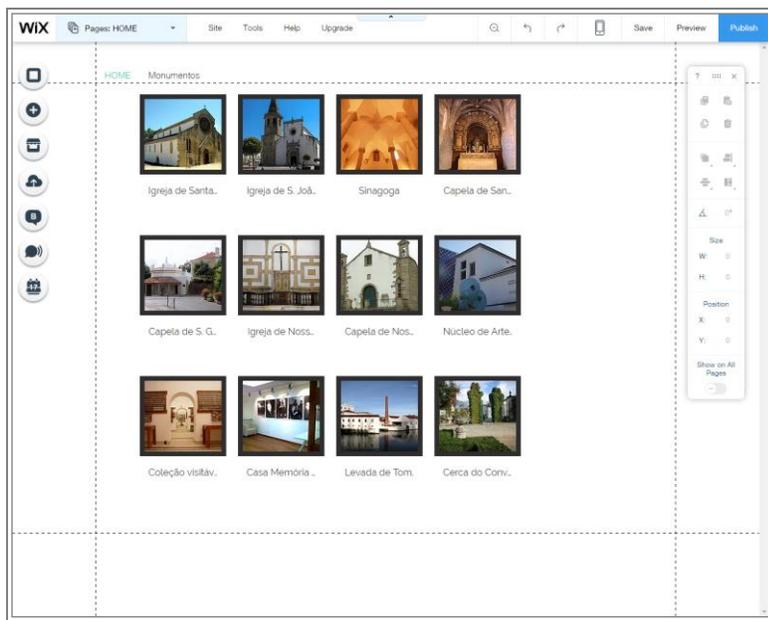


Figure 2: Website that manages the information provided by the QR codes

Currently each space has a QR code that points to information in Portuguese, however, it is the projects desire to provide information in other languages. In this first stage QR codes were created for 12 spaces (Table 1).

Table 1 QR codes created by the Tomar Municipality

João de Castilho Municipal Museum – Contemporary Art Hub	Convento de Cristo Woods or National Sete Montes Woods
Santa Maria do Olival Church	Nossa Senhora da Graça/Misericórdia Church
S. João Baptista Church	Nossa Senhora da Piedade Chapel
Synagogue	Matchstick Museum
Santa Iria Chapel	Lopes-Graça Memory House
São Gregório Chapel	Tomar “Levada” – Mills and Royal Oil Presses

Audio-guides were created in the facilities of the Technology School of Abrantes with the use of a digital recorder Zoom H4nSP and in an amateur studio. The narration was done by an experienced individual. In editing and production, discourse rhythm was optimized, with correction of parasitical noise and less clear diction. The audio was exported to wav in 48 Khz and 32 bit quantization, allowing future editing and web compression with lossless quality. 27 audio-guides (Table 2) were produced and are available in the official website of the Municipal Chambers.

Table 2 Audio-Guide list created for the Tomar Municipality

1. Templar Castel and Convento de Cristo	15. Convento de Cristo Woods or National Sete Montes Woods
2. Santa Maria do Olival Church	16. S. Francisco Church and Convent
3. S. João Baptista Church	17. City Hall
4. Synagogue	18. Casa dos Cubos
5. Santa Iria Chapel	19. Pillory
6. São Gregório Chapel	20. Vieira de Guimarães House
7. Nossa Senhora da Graça/Misericórdia Church	21. Estaus
8. High Pegões Acqueduct	22. Initiative and Tourism Commision House
9. Nossa Senhora de Conceição Chapel	23. Phillippine Monument
10. Nossa Senhora da Piedade Chapel	24. Paraíso Cine-Theater

11. João de Castilho Municipal Museum – Contemporary Art Hub	25. Manuel Guimarães House
12. Matchstick Museum	26a. S. Lourenço Chapel
13. Lopes-Graça Memory House	26b. S. João or Round Redondo Pattern
14. Tomar “Levada” – Mills and Royal Oil Presses	

In this first stage audio-guides were created solely in Portuguese. It is however the intention to produce them in other languages. In figure 3 it is possible to situate the spaces where audio-guides were created.

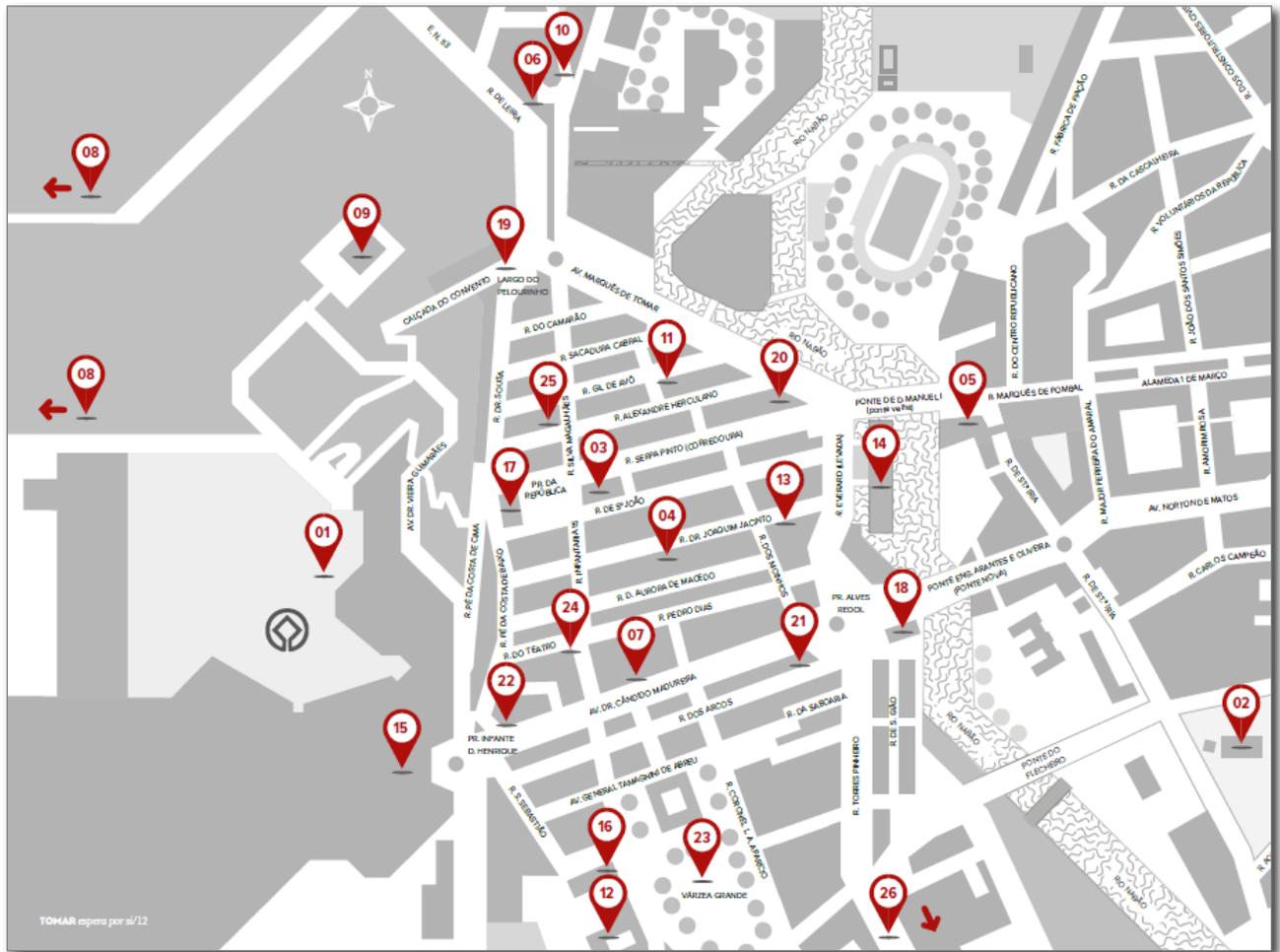


Figure 3: Location of audio-guides in the city of Tomar (Adaptation from the Município de Tomar, 2015)

SECOND STAGE OF THE PROJECT

In the second phase of the project we intend to widen the production of QR codes to other locations and to provide information in various languages, as well as producing audio-guides in other languages, promoting accessible tourism. Likewise, currently the audio-guides must be downloaded from the municipal website, however, it's project's intent that they be downloadable *in loco*. The use of QR codes is a possibility to achieve this, as are Bluetooth or automatic activation through GPS coordinates.

Audio-guides will also be available through the Audite Platform which gathers audio-guides from the main monuments and national museological spaces (Figure 4).



Figure 4: Audite Platform

In this second stage of the project we will likewise develop an electronic data management platform for the municipality of Tomar that centralizes and facilitates the updating of information in diverse electronic mediums used by municipality (Figure 5).

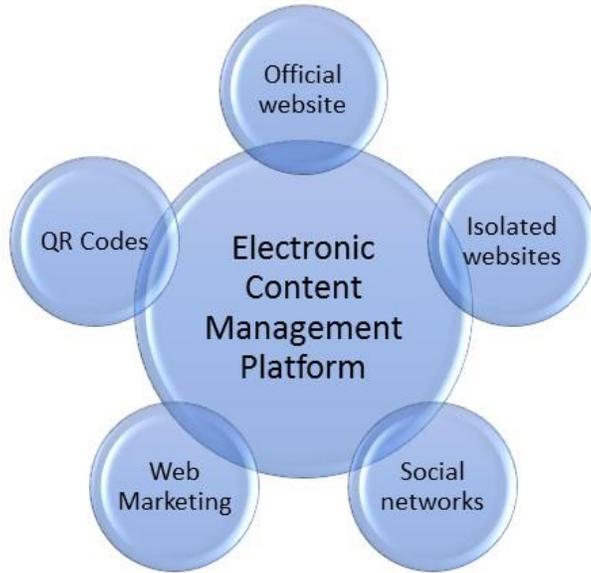


Figure 5: Electronic Content Management Platform

The creation of a promotional video that promotes Tomar beyond borders is another objective, having been previously defined by the guidelines of the Municipal Chambers and with the Coordinator of the Tourism Courses in the Polytechnic Institute of Tomar.

CONCLUDING NOTES

Accessibility to spaces and promotion of content in accessible formats to all citizens should be a municipal priority, seeking to adapt the touristic product to the various citizens rather than make them go through the obstacles themselves. Through this project we seek to promote the heritage of the city through ICT whilst making information to blind or amblyope individuals, as well as foreign visitors, through QR codes and audio-guides, thus seeking to promote a more equal opportunity to everyone that potentiates their return (Costa, 2005).

In the first stage of the project audio-guides and QR codes were created in portuguese for the main attractions in the city. In the second stage of the project we sought to widen this to other technologies and languages, as well as the development of an electronic platform that facilitates the management of electronic data for the municipal chambers, and the production of a promotional video the script of which has already been finished.

These technologies will allow the gathering of information about visitors and visited locations, allowing the Municipality the crossing of data with other data-sources (respecting data privacy), thus obtaining strategic information that will conveniently direct marketing strategies. Concurrently, this initiative can serve as an impulse to the creation of similar projects in terms of

restaurants, hospitality industries, local commerce, etc., promoting the local economy and entrepreneurship.

It also goes in line with efforts to use the technologies in pedagogical activities, with tests having been conducted in the Regional Education Seminar, which brought geocaching into dialogue with this project (Marques, 2016b).

The created products will be validated by users and specialists and surveys will be conducted to resident population and visitors towards improvements in the project.

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