How mobile can factor into a **location based transmedia storytelling** overall strategy: The TravelPlot Porto case study

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Abstract | Location based transmedia storytelling projects have been recently applied to tourism. They use several communication platforms, each with different objectives and targeting different types of users. These projects have the ability to connect ancient human experiences such as storytelling and games along with locative media, allowing users to explore locations, which are unfamiliar to them. This paper analyses the TravelPlot Porto case study, specifically the behavior on its two main platforms, the website and the mobile application. Despite being an isolated case study, the results have been encouraging, revealing the audiences interest for location based transmedia storytelling projects, and contribute to a better understanding of gains obtained through the integrated use of several platforms.

Keywords | Location based transmedia storytelling, Tourism.

Resumo | Projetos *location based transmedia storytelling* têm sido aplicados recentemente no sector do turismo. Aqueles projetos utilizam várias plataformas, cada uma com objetivos diferentes e com diversos utilizadores alvo. Estes tipos de projetos associam narrativas, jogos e por vezes *locative media*, permitindo assim aos utilizadores explorarem localizações que não lhes são familiares. Este artigo analisa o caso de estudo – TravelPlot Porto – e mais especificamente, o comportamento em duas das suas plataformas: o website e a aplicação móvel. Apesar de ser um caso isolado, os resultados têm sido encorajadores, revelando o interesse dos utilizadores por projetos *location based transmedia storytelling*. Estes resultados contribuem para uma melhor compreensão dos ganhos que se podem obter ao utilizar diferentes plataformas de uma forma integrada.

Palavras-chave | Location based transmedia storytelling, Turismo.

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1. Introduction

Storytelling is uniquely human and one of the most effective methods to communicate knowledge (Lidwell, Holden & Butler, 2003, p. 186). Like stories, games are integral to human culture. They are able to engage players and put them at the center of the action (Silva & Sutko, 2009, p. 1).

The application of location based transmedia storytelling techniques to tourism, combining those two fields is recent but it is rapidly gaining attention. One of the drivers behind this interest is the availability and low price of location-aware technology. Mobile phones are part of our daily routines and for many, the primary vehicle for communication and media consumption (Nielsen, 2013), particularly when travelling. Today's tourists are able to connect anytime, anywhere, from their chosen device. Besides the connection to the websites and social networks, smartphones originated a new market: the applications market. Gartner estimated in 2013, 102 billion downloads, totaling $26 billion revenue (Levis, 2013). A large part of applications in tourism serve as travel guides containing historical and cultural information, helping visitors and residents to locate, experience and being entertained as well as receive relevant information about a location. These mobile tour guides applications have provided a new mobility of access, presence, and different ways of interaction. Some of these tour guides join storytelling and location-based games.

2. Literature review

The World Travel Market (WTM) Report identified 'gamification' as a key global trend in tourism (WTM, 2011). First used in 2008 by James Currier (2008) and Bret Terrill (2008), it only became a widespread word in 2010. Its definition is not a consensual one (Deterding, Dixon, Khaled & Nacke, 2011). Zichermann and Cunningham (2011, p. xiv) defined it as "the process of game-thinking and game mechanics to engage users and solve problems"; Deterding et al. (2011, p. 9) defined it as "the use of game design elements in non-game contexts"; Rapp (2013, p. 485) on the other hand, defined it as "an umbrella term that refers to the use of elements borrowed from digital game domain, in order to improve the overall user experience in non recreational applications and services".

Gamification intends to make non-game products and services more enjoyable and engaging (Deterding et al., 2011) and to develop inner motivations, which leads to a behavior change (Rapp, 2013). Examples of game mechanics are visual elements commonly used in video game interfaces, mechanisms for rewarding, features for creating challenges amongst users and recognitions of status like badges (Rapp, 2013). Companies are using gamification as a content marketing tactic, aiming to charm and engage consumers. Game mechanics can get consumers addicted to brands since they are able to create in-depth engagement, motivation consumers to return to that brand and use fun into the consumers' daily lives (Beard, 2013).

Xu, Tian, Buhalis and Weber (2013) identified the two current uses of games in the tourism industry - online/offline games and location based mobile games – as well as the two main motivators for gaming in tourism, which are the gain of practical information about a destination and the socialization with others. Their study also reveals an interest for games in tourism marketing, which ultimately can lead to a rise in brand awareness.

Location-based games are a product of the social need to locate who and what's nearby. They use mobile digital location-aware technologies to interface between physical and digital space. Their outcome depends on the player's movement and interaction with the physical locations. It's not only on the events on the screen that count but also the location of players (Ejsing-Duun, 2011, pp. 21-22). They have two characteristics that differentiate them from the other games: the use of the city as a game board and

the use of mobile devices with location awareness as interfaces that connect both digital and physical spaces (Silva & Sutko, 2009, pp. 3-4). They can enrich educational practices through the engagement they provide (Ejsing-Duun, 2011, p. 3). Space and place can be used to convey narrative and aesthetic information and the location stories can function as the setting (Ejsing-Duun, 2011, p. 49). For games with an ending, only a small portion of your players will ever see it. Players stopping playing whenever they feel like it. This is inherent to the form (Berghe, 2013).

3. Case studies in tourism

'Great American GPS Stash Hunt' released in 2000 – later renamed Geocaching – was the first social platform experience using Global Positioning System (GPS) (Gordon & Silva, 2011, pp. 64-65). This location-based game is played around the world. Participants hide objects and record the GPS coordinates, so other participants can find it (Silva & Sutko, 2009, p. 24). Geocaching games can be organized around a specific objective, being the reason for travelling to that specific location on holidays. For example, the Ohio Historical Society has used geocaching as a strategy to engage tourists and locals. Another example is the Utah state through the Utah Cache Games, the 'Are U Nuts?' game. Players were encouraged to 'discover Utah, one cache at a time'. They picked up artifacts (nuts), marked their location and hid then within Utah (Silva & Sutko, 2009, pp. 32-33). Geocaching is more than the destination, it is about the journey, discovery and challenges the geocachers embark. There is no pre-determined route to the cache. It is up to the geocachers to choose it (Willis, 2010, p. 60). Geocaching is effective in connecting people to locations but it is not ideal to connect people to each other. Only when mobile phones began to be used as interfaces for location-based mobile games did this connection begin (Gordon & Silva, 2011, p. 67).

There are multiple examples of location-based games in tourism, like REXplorer, a game launched in 2007, designed for tourists, where the game world showcased the history and culture of Regensburg (Ballagas, Kuntze & Walz, 2008). WhaiWhai, released a year later, is a location-based game where each location has an enigma to solve (WhaiWhai, 2011). Other examples of location-based games include Tripventure, released in 2012 and Strayboots launched in 2009. Tripventure can be used as a tour guide where players experience the city via a virtual story using a smartphone or a tablet PC (Tripventure, 2013). Strayboots is a mixture of scavenger hunt and walking tour. Through a mobile phone, players are challenged to find sites, answer questions, and take photos. With each challenge solved, they learn fun facts about the location and earn points (Strayboots, 2013).

There have been different games and gamified projects in tourism, which aren't location based but aim to attract future tourists to the respective locations. Smile Land by Visit Thailand, available since 2011, is set in more than two hundred places in Thailand (Smile Land, 2011). The game Agent UK was launched in 2012 by the British Tourism Authority - VisitBritain, as part of the release of the 007 movie Skyfall. It had the objective to engage the social media followers of VisitBritain. In this game, each player became an international spy. There were four missions, across four zones in Britain, and each mission had four tasks. The players had to place a tag on a single image indicating the rogue agent location. A series of clues were then posted via social channels Twitter (@VisitBritain) and Facebook (Love UK) hinting at that agent's exact location (Modiano, 2012). Brazil Quest, released in 2012, was created by *Instituto Brasileiro de Turismo* and had the twelve host cities of the 2014 World Cup as the games' setting. Yep, the story protagonist received a magic ball with all the joy and Brazilian warmth. This ball transported him to Brazil where the action of the game took place (Aquarela 2020, 2012). Expedia's - Tag me if you can, also launched in 2012, was an

international scavenger hunt where players followed Australian reality-TV star Nathan Joliffe. This initiative had the objective to showcase some of Expedia's destination spots for Australian travelers. Through a series of videos and clues, players had to tag Nathan's location on a map within ten meters (Kuo, 2012).

TravelPlot Porto was an experimental project, which began on June 17th and ended on September 9th 2012. During this period, the city of Porto and Vila Nova de Gaia where the settings of a treasure hunt, resorting to pervasive game techniques. Tourists and locals had the opportunity to explore Porto's history, monuments, historical characters, Porto's events, sights, wine and gastronomy. TravelPlot Porto told the story of Peter, an English tourist, which was on a mission to save Port Wine. In order to succeed, he had to find the location of Bacchus's cup and the remaining hidden treasure throughout the centuries by the Cale, in several city locations, before Filipe, an ex-Cale member found it first.

TravelPlot Porto used the mechanic of seeking out a hidden treasure. This mechanic lowered the entry barrier of the project, since tourists immediately understood the idea behind it. TravelPlot Porto tapped into the tourist natural instinct of finding things, matching to his objective of gaining knowledge on their new environment. Another advantage of seeking and finding mechanics is its straightforwardness and easiness to implement. This gameplay can be applied to different stories, particularly mysteries (Trefry, 2010, pp. 129-131), which is TravelPlot Porto's case. The procedures and rules were very simple. Players had to go to the story locations and find the hidden treasure before the antagonist of the story did.

TravelPlot Porto story was scattered across different platforms such as a mobile application (iPhone and Android) (Figure 1), a website (Figure 2), social networks (Facebook, Twitter, Pinterest and YouTube), a print map and live events (Gastronomy, Wine Tasting, Douro River Cruise and Souvenirs). The application was the only platform where tourists could actively search for the treasure by doing check-in at

Source: Own construction

Figure 1 | TravelPlot Porto iPhone application gameplay.

the story locations, the map served as a replacement for those who didn't have access to a smartphone, the website was where all TravelPlot Porto platforms were aggregated, including their release schedule. The social networks served as direct mean of communication between the project and the audience. TravelPlot Porto brand used three social networks (Facebook, Twitter and YouTube) to share the projects' information. The story protagonist, Peter Smith, also used three social networks (Pinterest, Twitter and YouTube) where he engaged with the audience. The live events involved participants in the most sought out touristic experiences in Porto.

This paper analyses TravelPlot Porto results in terms of the audience engagement achieved on two of its main platforms: mobile application (iPhone and Android app) and the website.

4. Methodology

TravelPlot Porto is part of an overall investigation into location based transmedia storytelling tech-

Source: Own construction

Figure 2 | TravelPlot Porto website.

niques applied to tourism. Its main objective was to obtain data on the engagement and behavior across the different platforms, what was their usage, which was the content created and shared, what was the interaction with the story and to assess the potential for location based transmedia storytelling projects in tourism (Ferreira, Alves & Quico, 2012). Data describing tourists' practices, needs and behaviours were collected from participant observation, case studies and exploratory interviews, in order to construct TravelPlot Porto. Several data collection methods were used to capture tourists' behaviours across different platforms and which content they created, shared and how frequently, such as: online questionnaires, interviews to foreign tourists at a Porto hostel, written interviews to Portuguese university students and different tools according to each specific platform (i.e. Google Analytics, Facebook Analytics, YouTube Analytics, etc.) (Ferreira, Alves & Quico, 2014).

In this paper, we analyze the data gathered from the website and application Google Analytics as well as the number of downloads that were provided directly by App Store and Google Play. This data, in particular, contributes to the description of the user behavior on both platforms and their usage. The data collection took place between June 17th and Septem-

ber 10th 2012, which corresponded to the beginning of TravelPlot Porto and the day after the end of this project. The iPhone application was released on June 17th like all the other main platforms of TravelPlot Porto. Due to the public demand, an application for the Android operating system was released a couple of weeks later, on July 23rd.

Six weeks after its release, TravelPlot Porto application was downloaded 755 times: 725 iOS operating system and thirty Android operating system. The final count of downloads was 950 times: 834 were iOS operating system and 116 were Android operating system. The data related to July 17th was removed from the data analysis, because on that day, the Android application was tested. Google Analytics aggregated the data from both operating systems. The total number of visits to the TravelPlot Porto website was 3,159 visits. The data regarding the first two days of this experience (June 17th and June 18th) aren't included in this analysis due to a programming error.

One of the researchers had an active interaction. This compromise was necessary because of the need to check the material released and the need to promote and explain TravelPlot Porto, an unknown project to the public that was tested in a real world environment. This interaction was kept to the minimum.

5. Results

5.1. TravelPlot Porto application

Overall, there were 1,895 visits to TravelPlot Porto application. The daily average was 22 visits. The maximum of daily visits on any given day was 107 visits, while the minimum was two visits.

The application visits originated from 32 countries/territories, ten of which contributed to 94.99% of the visits. The top countries were Portugal (1,391), Spain (150), Italy (45), Netherlands (40), Poland

(38), Brazil (34), United Kingdom (31), France (29), Switzerland (25) and Germany (17).

There were 168 cities registered on Google Analytics. Almost half of the visits originated from Porto and Lisbon (873 visits). Most of the cities on the top ten national cities were from the north of the country: Porto (515), Vila Nova de Gaia (55), São João da Madeira (49), Maia (48), Matosinhos (33), Gondomar (28) and Vila do Conde (25). As for the international cities, Madrid was the city with most visits (87) followed by Milan (32) and Wroclaw (24).

The language with the most pageviews was Portuguese (Portugal) accessed in Portugal with 653 pageviews (34.46%) and Portuguese accessed in Portugal with 381 pageviews (20.11%). The next most used language was Spanish accessed in Spain with 183 pageviews (9.66%); English accessed in Portugal with 79 pageviews (4.17%); German accessed in Germany with 76 pageviews (4.01%); English accessed in the United States with 74 pageviews (3.91%); Italian accessed in Italy with 46 pageviews (2.43%); Polish accessed in Poland with 45 pageviews (2.37%), English accessed in Great Britain with 44 pageviews (2.32%), Dutch accessed in the Netherlands with 41 pageviews (2.16%), Portuguese accessed in Brazil with 41 pageviews (2.16%); French accessed in France with 34 pageviews (1.79%), Lithuanian accessed in Lithuania with 29 pageviews (1.53%), Russian accessed in Russia with 18 pageviews (0.95%) and Simplified Chinese accessed in China with 17 pageviews (0.9%).

From the 1,895 visits, 495 visits were from new visitors (26%), while 1,400 visits were from returning visitors (74%), almost three quarters of the application visits.

There were a total of 6,421 pageviews. This number includes the pages that were viewed plus the check-ins made on the application. Most pageviews were viewed between 61-180 seconds (1,629 pageviews) and 181-600 seconds (1,572 pageviews) and more than 1,801 seconds (988 pageviews).

The page with more pageviews was the Map indicating the locations with 1,405 pageviews followed by the Souvenir page where tourists could take a photo of their journey and share it online with their friends by email, Facebook or Twitter, with 601 pageviews and the Win page where the questionnaire of the project was inserted with 576 pageviews. Two of TravelPlot Porto partners are in the top twenty most viewed pages: Barco Rabelo (DouroAzul) with 75 pageviews and Cálem with 68 pageviews.

TravelPlot Porto had 42 different locations, 37 were known. The remaining five could only be unraveled by going to four of TravelPlot Porto partners (Cálem; DouroAzul; Vinhas d'Alho; Porto com Arte) and by filling out the project's questionnaire.

The location with the most check-ins was Mercado do Bolhão (22), followed by Porta de Sant'Ana and Porto com Arte (with 9 check-ins each), São Bento Station (8), Casa da Feitoria (7), Barco Rabelo (DouroAzul) (7), Postigo de Carvão (5), Monumento a D. Pedro IV (5), Casa do Infante (Exterior) (4), Igreja de Santa Clara (4) and Muro dos Bacalhoeiros, Casa n.º 114 (4).

In terms of check-in by users, there were 21 different ID users, which did a total of 127 check-ins. The vast majority of users (18) did between 6 and 1 check-ins. The number of check-ins is low considering the activity and users of TravelPlot Porto application. One of the possible explanations that were given at the TravelPlot Porto questionnaire and interviews conducted is the lack of free Wi-Fi in the city, or its perception. Because of the high roaming fees, tourists wouldn't turn on their data roaming, therefore not being able to use some of the TravelPlot Porto application functionalities such as the check-in.

5.2. TravelPlot Porto website

The day with the highest number of visits to the TravelPlot Porto website was June 26th with 395 visits, which corresponded to the aftermath of the press coverage that occurred on the public presentation of the project, on June 21st.

The website was visited by 51 countries/territories. Ten of those 51 countries/territories were responsible by 94.87% of the visits. Portugal was by far the top origin country with 2,560 visits (81.04%), followed by the United States with 102 visits (3.23%), United Kingdom with 99 visits (3.13%), Brazil with 67 visits (2.12%) and Spain with 55 visits (1.74%).

TravelPlot Porto website was visited by 350 cities. The top ten national cities were: Porto (1,109), Lisbon (461), Vila Nova de Gaia (222), Maia (109), Braga (65), Matosinhos (60), Felgueiras (44), São João da Madeira (43), Funchal (42) and Aveiro (38). The top ten international cities were London (36), New York (24), Sydney (17), Madrid (16), Cardiff (14), Derby (10), Araras (10), Belo Horizonte (9), Orange (9) and Athens (8).

Portuguese and English were the most represented languages with 93.13% – Portuguese (Portugal) with 1,431 visits, English (United States) with 859 visits, Portuguese with 362 visits, Portuguese (Brazil) with 159 visits, English (Great Britain) with 72 visits and English with 59 visits. Spanish was the third language with 34 visits in Spanish (Spain) and Spanish (21), followed by French with 28 in French (France) and (16) in French. The number of visits from unique visitors to the TravelPlot Porto website was 2,395 visits (76%). The remaining 764 visits (24%) came from returning visitors.

The total number of pages viewed (pageviews), including the repeated view of a single page was 9,099 pageviews. The biggest number of pageviews was between 181-600 seconds (2,348 pageviews), followed closely by the duration of 0-10 seconds (2,153 pageviews), 61-180 seconds (1,686 pageviews) and 601-1800 seconds (1,555 pageviews). Most of the visits (2,033) lasted between 0-10 seconds, followed by 181-600 seconds (345 visits) and 181-600 seconds with 304 visits.

By analyzing the content on TravelPlot Porto website, the entry page was the page with the most pageviews (3,191), unique views (2,297) and the higher average time spent on the page (1 minute and 47 seconds). The second page with the most pageviews (958) and unique views (825) was the page Win, where the questionnaire was inserted, followed by the Synopsis with 794 pageviews and 610 unique views, the Release Schedule of TravelPlot Porto several platforms with 562 pageviews and 469 unique pageviews and the Team information with 438 pageviews and 355 unique pageviews. There was a preference to read the story by locations (432 pageviews), followed by chapters (422 pageviews) and all (86 pageviews). A quarter of the traffic of TravelPlot Porto website (799 visits) came from mobile devices, including tablet.

6. Conclusion

Gamification engages and motivates consumers. One of TravelPlot Porto main objectives was to promote the learning of Porto's history and culture in a creative and engaging way. TravelPlot Porto application, as a location-based game offered an alternative sightseeing experience, combining the game's world with the experience of navigating in the city. Even if participants weren't able to come to Porto, and search for the story's treasure on site, the rest of the platforms encourage audience's to engage with the story. Porto, as a destination, had an opportunity to share its message, learn and build relationships with the audience.

TravelPlot Porto application was downloaded 950 times, from 32 countries/territories and 168 cities. There were 1,895 visits, totaling 6,421 pageviews, and 21 different ID users that did a total of 127 check-ins. The vast majority of users, 18, did between 6 and 1 check-ins. Two of TravelPlot Porto partners were in the top six of check-in locations: Porto com Arte and Barco Rabelo (DouroAzul). The page with the highest pageviews was the Map with the locations (1,405 pageviews), then the Souvenir page with 601 pageviews and the Win page with 576 pageviews. Two of TravelPlot Porto partners

were in the top twenty most viewed pages: Barco Rabelo (DouroAzul) and Cálem. These results show that TravelPlot Porto's partners were amongst the locations most viewed and checked-in. Most of the application visitors were returning visitors (74%), which is in line with the goal of downloading the application and using it on site.

TravelPlot Porto website was visited by 51 countries/territories and 350 cities. The total number of pages viewed, including the repeated view of a single page was 9,099 pageviews. There was a preference to read the story by locations (432 pageviews), then by chapters (422 pageviews) and the story chronological (86 pageviews). A quarter of the traffic of TravelPlot Porto (799 visits) came from mobile devices, including tablet, which reveals the importance of mobile. The page with the release schedule of TravelPlot Porto platforms, only present in the website, was the fourth most visited. These results indicate that the website's objective to be a first contact with TravelPlot Porto was successful. However the website was unable to attract returning visitors (24%) due to its static nature, since no new content was added throughout the project.

The page Win was the second most visited page on the website and the third most visited page on the application, indicating the audience's curiosity for the rewards. Most pageviews on the website were viewed between 61-180 seconds while that viewing time on the application decreased to 61-180 seconds, showing a shorter engagement time.

The results of the application and website of this location based transmedia storytelling pilot experience proved to be very positive in terms of reach and activity considering the multiple constrains of the project, namely the very limited financial and human resources in addition to the non-existent distribution budget. Another main limitation was the lack of free Wi-Fi at Porto's Tourism offices and the perceived non-existence of free Wi-Fi throughout the city.

Hide and seek games are popular. Their skills level low, fitting the tourism context of limited time in an unfamiliar environment. Although TravelPlot

Porto aimed to function as a travel guide, where tourists chose the locations they were more interested in visiting, the reward of getting to know the city, its stories and culture felt short. No player was close of checking-in in all locations. The reward mechanics of TravelPlot Porto could be improved for example by introducing competition amongst other users and not only the antagonist of TravelPlot Porto story, and by recognition of status through points or badges. Another betterment of TravelPlot Porto gameplay lies in the balance between the challenge and success. The gameplay could to be divided into different stages of success instead of just one, the overall finding of the treasure.

TravelPlot Porto is an exploratory case study with encouraging results but these results cannot be generalized. Further investigation and experiments are required to understand the application of location based transmedia storytelling techniques to tourism.

Acknowledgements

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