Mobile Web Strategy for Cultural Heritage Tourism: A Study on Italian Opera Houses

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Abstract. Italian Opera is renowned the world over. It has recently been proposed for nomination to the Representative List of the Intangible Cultural Heritage of Humanity and still, though confronted with sustainability issues, cooperates in typifying Italy as a cultural tourism destination. This paper focuses on Italian Opera Houses, comparing their mobile web strategies, in terms of the mobile friendliness of their websites and their m-commerce models, in the frame of a global and generational competition. Besides, availability of English content for an international audience is specifically considered. Results confirm some general trends in web communication and marketing – namely a predominance of responsiveness within technical solutions, and outsourcing among e-commerce policies – and highlight weak points. The study was based on a systematic process and free web tools, that can be used for other sorts of cultural heritage institutions, like theatres, museums, art collections, or historic sites.

Keywords: Intangible heritage · Cultural tourism · Opera · Italy · Mobile web strategy · Mobile-friendliness · m-commerce

1 Introduction

The importance of mobile web technology in cultural heritage tourism has been recognized since its very inception [1–5]. Mobile web technology opens unexplored scenarios by changing customers' behaviours as well as operators' business models and services [6–8].

Many Italian cities and places are known as cultural destinations and are visited for their cultural heritage and in particular for their "must see sites". Several studies have investigated the strategies for promoting tangible cultural resources [9, 10]. Less investigated is the role of attractions related to intangible cultural resources [11]. This paper focuses on the performing arts and in particular on Opera, also considering that four kinds of Operas (those of Peking, Tibet, Yueju and Kun Qu) have been included in the UNESCO Intangible Cultural Heritage Lists [12].

Italian Opera is renowned the world over, as Opera itself was born in Italy thanks to 16th- and 17th-century composers Peri, Caccini and Monteverdi. It contributes to

characterise Italy as a cultural tourism destination [13], and has been proposed for nomination for the UNESCO Intangible Cultural Heritage lists.

As part of a larger study, whose goal is to explore how Italian Opera Houses use the Internet and the Web or, in more technical words, their web presence strategy [14], this paper reports analyses of Italian Opera Houses' mobile web strategies, in terms of how they support mobile access to their websites, including e-commerce options [15–17].

The analyses start from the identification of the business challenges [18] facing the Italian Opera Houses. These challenges are related to three main issues: high production costs, elderly audience, and local market [19, 20]. Even if Opera is a sector characterised by the Baumol effect – i.e. the technological evolution has not improved productivity, nor reduced costs [21, 22] – the Web and the mobile Web offer new ways to address promotion and marketing problems [1–4]. In particular, the role of the mobile Web is more and more important, due the increasing number of accesses from mobile devices [8]. A crucial event marking the role of mobile technologies took place in 2014, when mobile exceeded PC Internet usage for the first time [23].

In our study, the Italian Opera Houses fully recognized as such, the so called "Fondazioni Lirico-Sinfoniche" were considered, including milestones in the world history of theatres like La Scala in Milano, La Fenice in Venice, and the Arena di Verona [24].

The paper is structured as follows. The next section illustrates the background of the study: intangible cultural tourism, Opera and mobile. Section 3 introduces the Opera Houses selected for the analysis of the mobile Web strategy, and the tools used in the study. Section 4 illustrates the results. Section 5 discusses the results, and concludes the paper.

2 Background

2.1 Intangible Cultural Tourism

The role and impact of cultural tourism has been investigated from many points of views, focusing on different kind of cultural and heritage attractions [25]. Italy is known as a cultural tourism destination for its art and heritage resources. As recent indicators of this perception we can cite the number of UNESCO World Heritage sites (47 inscribed on the World Heritage, and many more submitted on the Tentative list [26], and the results of the last survey run by FutureBrand. Italy was one of the 22 out of 75 countries recognized as owning a "Country Brand". Even if Italy only ranks 12th in the overall ranking of the European Countries and 18th in the world ranking, it gained the first position in two of the parameters investigated by FutureBrand, namely Tourism and Heritage and Culture [27].

To effectively promote cultural tourism in a destination it is necessary to exploit all its distinctive elements [15, 17]. That implies a shift from conventional models of cultural tourism to new models of tourism based also on intangible culture and creativity [16, 28–30]. In this paper we are focusing on Italian Opera. Italy was the birthplace of Opera in the 17th century [31]. Italian composers are renowned the world

over and Italian is used for many musical terms. Italian Operas are among the most performed (see e.g. the statistics produced by Operabase [32]).

There is also a UNESCO nomination proposal for the inscription of Italian Opera on the Representative List of the Intangible Cultural Heritage of Humanity [33]. The potential tourism appeal for Italian Opera Houses has been thoroughly investigated by Fisichella [34]. The study describes the problems faced by Italian Opera Houses and their tourist attractiveness. Common problems are related to economic sustainability (that is reduction of public funding and difficulty to get private financing), the need of a generational change attracting young spectators and, in many cases, a local branding and promotion of the Opera seasons (see also [35, 36]). Italian Opera Houses have been transformed in private foundations, maintaining part of their public nature. Their funding are almost all public, and in the last years they have reduced to the 0.1% of the GDP [37]. Besides, private funding – private donations and business sponsorship – is not adequately supported by the Italian law.

Opera is "an art form in which singers and musicians perform a dramatic work combining text (libretto) and musical score, usually in a theatrical setting" [38]. As a result, it involves a large numbers of people, an average of two hundred for a single performance and high costs. From a tourist point of view, Opera is (mostly) an elitist cultural product. It represents a niche market, and art tourists spend more but are older than spectators of other performing arts, as Opera goers are over 60 years old on average. So that enlarging and renewing the audience are major concerns for the Opera Houses [39].

2.2   Opera and Mobile

Mobile accesses concern a variety of devices, from featured and smart phones to tablet and laptops. Recent surveys report that mobile has exceeded PC Internet usage worldwide and will account for 75% in 2017 [40]. Another reason why companies and organizations, including Opera Houses, have to adopt a mobile web strategy is related to the role of the so-called Generation Z teenagers, the actual and future customers, also named "smartphone generation", referring to their extensive use of mobile technologies [41–44]. It is comprised of young people aged 13–20 years (the age range varies in different countries and studies), a cohort that will soon outnumber the Millennials and that is crucial to support any initiative an Opera House plans to increase visitors of their websites and reduce the average age of Opera goers. Among the most recent we can cite those of La Scala [45], that had great success [46], and of the Teatro Massimo in Palermo [47].

From a technical point of view, eTourism scholars have analysed the gradual transition from the initial server-side approach to the responsive one [48, 49]. The responsive approach, which is client side, and aimed at allowing desktop webpages to be viewed in response to the size of the device, is currently predominant [50–52].

3   Methodology

The goal of the study has been to analyse the mobile web strategies of Italian official Opera Houses in the light of their business challenges [18], namely, high production costs, elderly audience, and local market, challenges that can be tackled reaching an economic sustainability, supporting on the Web a wider audience and the promotion of Opera as a tourism attraction. The mobile web strategy was analysed in terms of:

- the mobile-friendliness of the official B2C websites of the Italian Opera houses;
- their m-commerce models.

The availability of English editions of the websites, intended to promote the Opera Houses' seasons and performances outside the domestic market, was also verified.

3.1   Italian Opera Houses

As summarized by the MIBACT ministry (Ministero dei Beni e delle Attività Culturali e del Turismo, Ministry of Cultural Heritage and Activities and Tourism [24], the historical Enti lirici (literally, "Opera Institutions") have been clearly recognized as such and turned into private foundations, or "Fondazioni Lirico-Sinfoniche." The process started in 1996, was completed in 2010, and involved fourteen Opera Houses, including the Teatro alla Scala in Milano which was recently granted a legal status on its own, with no significant changes as far as this study has been concerned.

The list of the "Fondazioni Lirico-Sinfoniche" includes the Accademia di Santa Cecilia in Rome, which was not considered in this study due to its different mission: Santa Cecilia is mainly focused on concerts. Similarly skipped were the twenty-eight minor "Teatri di tradizione" ("traditional theatres"), which aim to promote, facilitate and coordinate musical activities – Opera among them – on a local scale. We therefore considered the thirteen Opera Houses in Table 1.

Table 1. Italian Opera Houses, their towns, and B2C websites, August 2016.

Fondazione Petruzzelli e Teatri di Bari	Bari	www.fondazionepetruzzelli.it
Teatro Comunale di Bologna	Bologna	www.tcbo.it
Teatro Lirico di Cagliari	Cagliari	www.teatroliricodicagliari.it
Maggio Musicale Fiorentino	Firenze	www.operadifirenze.it
Teatro Carlo Felice di Genova	Genova	www.carlofelicegenova.it
Teatro alla Scala di Milano	Milano	www.teatroallascala.org
Teatro San Carlo di Napoli	Napoli	www.teatrosancarlo.it
Teatro Massimo di Palermo	Palermo	www.teatromassimo.it
Teatro dell'Opera di Roma	Roma	www.operaroma.it
Teatro Regio di Torino	Torino	www.teatroregio.torino.it
Teatro Lirico Giuseppe Verdi di Trieste	Trieste	www.teatroverdi-trieste.com
Teatro La Fenice di Venezia	Venezia	www.teatrolafenice.it
Arena di Verona	Verona	www.arena.it

3.2   Testing Mobile-Friendliness

The concept of mobile-friendliness has been formally used by the World Wide Web Consortium (W3C) – whose mission is "to lead the Web to its full potential" – since 2005 [53]. The deliverables of the Mobile Web Best Practices Working Group (BPWG) of the W3C include the W3C Recommendation on "Mobile Web Application Best Practices" [54] released on December 14, 2010. They have come with the W3C mobileOK Checker, subtitled "Is your Web site mobile-friendly?" The debate on "Standards for Web Applications on Mobile" is still ongoing [55], but the Recommendation has not been updated after August 2015, and the W3C mobileOK Checker has been disabled [56].

To investigate the mobile-friendliness of the official B2C websites of Italian Opera Houses, or "Fondazioni Lirico-Sinfoniche", a more recent tool was used: the Google Mobile-Friendly Test (MFT) [57]. The MFT belongs to a group of Google webpages related to mobile-friendliness [58], which developers worldwide have been induced to consider as a de-facto standard since early 2015. Starting from April 21, 2015, Google has "expand[ed] its use of mobile-friendliness as a ranking signal, […] affect[ing] mobile searches in all languages worldwide and hav[ing] a significant impact in Google Search results" [59]. The move had been announced two months before.

The MFT is basically a Boolean test, i.e. it states whether the relevant webpage "appears to be" – or not to be – "mobile-friendly". In case it does not, the MFT lists the problems it has identified (though limited to a checklist of potential "usability issues" acknowledged as such, see Table 2), and recommends visiting the "Make this page mobile-friendly" webpage, where Google advice is offered to that purpose.

One more factor, download time, has been considered, as it influences mobile experience [60, 61]. Consequently, this study has used another tool made available to web developers by Google: the Google PageSpeed Insights [62]. This tool provides percent evaluations of download speeds from mobile devices, presented as results of compliance assessments based on a checklist of 10 speed-related recommendations, as for example, optimise images, minify HTML and reduce server response time. Similar percentages are supplied for desktop navigation. The relevance of download time to mobile friendliness has been confirmed by a recent choice of Google: from June 2016 PageSpeed Insights has moved the User Experience test for mobile pages into the Mobile Friendly Test [62].

In order to gather more data, and compare them with those provided by Google, download times from the websites of the Opera Houses were also recorded through Pingdom [63], a free web tool which tracks the uptime, downtime, and performance of websites. Based in Sweden, Pingdom monitors websites from multiple locations globally so that it can distinguish actual downtime from routing and access problems [64]. For each of the Opera Houses' websites, data about download times were obtained through Pingdom from servers in Stockholm (Sweden), New York, NY (USA) and Melbourne (Australia).

Similar tools are currently available, like WebPageTest or VarVy. They add to the range of no-cost opportunities which website managers can use to gather dedicated and relevant data in terms of mobile-friendliness and page speed (Table 3). Website

Table 2. Mobile-friendliness usability issues acknowledged as such by Google and their meaning

Flash usage	Most mobile browsers do not render Flash-based content. Therefore, mobile visitors will not be able to use a page that relies on Flash in order to display content, animations, or navigation
Viewport not configured	This tag tells browsers how to adjust the page's dimension and scaling to suit the device
Fixed-width viewport	This report shows those pages with a viewport set to a fixed width
Content not sized to viewport	This report indicates pages where horizontal scrolling is necessary to see words and images on the page. This happens when pages use absolute values in CSS declarations, or use images designed to look best at a specific browser width (such as 980px)
Small font size	This report identifies pages where the font size for the page is too small to be legible and would require mobile visitors to "pinch to zoom" in order to read
Touch elements too close	This report shows the URLs for sites where touch elements, such as buttons and navigational links, are so close to each other that a mobile user cannot easily tap a desired element with their finger without also tapping a neighboring element
Interstitial usage	Many websites show interstitials or overlays that partially or completely cover the contents of the page the user is visiting. These interstitials, commonly seen on mobile devices promoting a website's native app, mailing list sign-up forms, or advertisements, can make for a bad user experience. In extreme cases, the interstitial is designed to make it very difficult for the user to dismiss it and view the real content of the page. Since screen real-estate on mobile devices is limited, any interstitial negatively impacts the user's experience

Table 3. Tools considered in this study, those used [*], and their URLs

W3C mobileOK Checker		validator.w3.org/mobile
Google Mobile-Friendly Test	[*]	www.google.com/webmasters/tools/mobile-friendly
Google PageSpeed Insights	[*]	developers.google.com/speed/pagespeed/insights
Pingdom	[*]	tools.pingdom.com
WebPageTest		www.webpagetest.org
VarVy		varvy.com

managers might also consider usability issues that were recently raised by mobile-first approaches [8, 65, 66].

3.3   E-commerce Models

As for e-commerce practices implemented by the identified Opera Houses, they have been assessed by visiting the B2C official websites, and taking into consideration whether

- e-commerce functions were available;
- e-commerce functions, if any, were purposefully developed, or outsourced;
- navigation along the e-commerce process, if any, kept the Opera's look-and-feel;
- e-commerce functions, if any, allowed to choose where to seat in the theatre room.

Lastly, the availability of English editions of the B2C official websites was checked, as it is important for promoting the Opera Houses' seasons and performances outside the domestic market and the e-commerce.

4 Results

The Google Mobile-Friendly Test established that three out of thirteen Italian Opera Houses websites were not mobile-friendly when checked in August 2016 (Table 4).

Though none of them used Flash or interstitials, the data collected showed that non-compliance – where this was the case – was total; in other words, the three non-compliant Opera Houses looked as they had not started the process to become mobile-friendly at all.

According to Google (Table 5), only two of the mobile-friendly websites – those by La Scala and Arena – were found to be 100% compliant in August 2016. The latter was positively ranked by Google also in terms of mobile download speed (74%), while La Scala performed considerably worse under this respect (49%). More analytical data collected through Pingdom substantially confirmed the overall results from Google. Download times tested from different continents, however – significantly worsening with physical distance – suggested that no specific policies were adopted by none of the identified Italian Opera Houses as far as Content Delivery Networks (CDN) were concerned. Among the non-compliant and less proficient Italian Opera Houses websites, the Teatro Regio's (Turin) was at least relatively fast, while the Carlo Felice's (Genoa) apparently added time-consuming download to non-compliance.

All the mobile-friendly websites by the identified Opera Houses appeared to have adopted a responsive approach.

As for e-commerce, ten out of the thirteen Opera Houses identified had implemented e-commerce functions by August 2016 (Table 6). The shopping carts' webpages invariably sported brands of their outsourced developers or shared platforms, indicating that none of the e-commerce functions had been built in-house. Differences were instead found in graphic environments, depending on whether the Opera Houses' online customers were directed to:

1. the home page of a ticket-selling platform, with no further indications;
2. a specific page of a ticket-selling platform, with the platform's look-and-feel;
3. a specific page of a ticket-selling platform, with the Opera House's look-and-feel.

The last case – i.e. where the customer is not abruptly carried somewhere else – was clearly the best, though only the websites of Maggio Musicale (Florence), La Fenice (Venice) and La Scala (Milano) kept the Opera House's look-and-feel along the purchase process. La Scala, actually, took customers to a different browser's window,

Table 4. Italian Opera Houses, mobile-friendliness usability issues identified by Google, and Google-evaluated mobile user experience percentages, August 2016 ($\sim$ partially mobile-friendly)

Opera House	Flash usage	Viewport issues	Content not sized	Fonts too small	Touch elements too close	Interstitial	User Experience, as quantifed by Google	Mobile-friendliness
Fondazione Petruzzelli e Teatri di Bari							98%	$\sim$
Teatro Comunale di Bologna		x		x	x		65%	
Teatro Lirico di Cagliari							99%	$\sim$
Maggio Musicale Fiorentino							97%	$\sim$
Teatro Carlo Felice di Genova		x	x	x	x		58%	
Teatro alla Scala di Milano							100%	x
Teatro San Carlo di Napoli							91%	$\sim$
Teatro Massimo di Palermo							96%	$\sim$
Teatro dell'Opera di Roma							92%	$\sim$
Teatro Regio di Torino		x	x	x	x		68%	
Teatro Lirico Giuseppe Verdi di Trieste							90%	$\sim$
Teatro La Fenice di Venezia							99%	$\sim$
Arena di Verona							100%	x

Table 5. Italian Opera Houses, download performances according to Google (Mobile and Desktop, percentages resulting from compliance assessments) and download times according to Pingdom (seconds), August 2016

Opera House	Mobile	Desktop	Stockholm	New York	Melbourne
Fondazione Petruzzelli e Teatri di Bari	14%	18%	3.36	4.27	12.14
Teatro Comunale di Bologna	56%	68%	1.64	2.55	6.18
Teatro Lirico di Cagliari	35%	14%	2.45	4.14	9.29
Maggio Musicale Fiorentino	56%	69%	1.87	3.81	10.44
Teatro Carlo Felice di Genova	31%	35%	6.53	8.55	17.88
Teatro alla Scala di Milano	49%	63%	3.23	5.32	8.97
Teatro San Carlo di Napoli	45%	32%	1.22	2.12	6.18
Teatro Massimo di Palermo	68%	87%	1.39	2.38	6.16
Teatro dell'Opera di Roma	72%	87%	1.41	3.22	4.40
Teatro Regio di Torino	67%	78%	1.11	2.73	6.84
Teatro Lirico Giuseppe Verdi di Trieste	34%	10%	1.88	3.39	7.81
Teatro La Fenice di Venezia	34%	40%	2.16	7.97	12.87
Arena di Verona	74%	90%	0.64	1.56	4.93

Table 6. Basic e-commerce strategies by Italian Opera Houses, August 2016 ($\sim$ look-and-feel of La Scala website only partially kept)

Opera House	e-commerce	Same look-and-feel	Interactive plan
Fondazione Petruzzelli e Teatri di Bari			
Teatro Comunale di Bologna	x		x
Teatro Lirico di Cagliari			
Maggio Musicale Fiorentino	x	x	x
Teatro Carlo Felice di Genova			
Teatro alla Scala di Milano	x	$\sim$	x
Teatro San Carlo di Napoli	x		x
Teatro Massimo di Palermo	x		x
Teatro dell'Opera di Roma	x		x
Teatro Regio di Torino	x		
Teatro Lirico Giuseppe Verdi di Trieste	x		
Teatro La Fenice di Venezia	x	x	x
Arena di Verona	x		x

where only details of La Scala graphic brand (the background color and the logo) were kept. The Opera Houses from Bari, Cagliari and Genoa did not provide e-commerce functions at all.

As for m-commerce, the difference between mouse-driven desktop design and gesture-driven touch-screen design is still a general theme, as is the interface size in e-commerce. Choosing a seat in an Opera theatre may be crucial for the purchase process, while interacting with the plan of an theatre through a smartphone is ergonomically unfriendly.

None of the visited e-commerce pages seemed to comply with mobile-friendliness needs, with the exceptions of instances of 1 (the home page of a ticket-selling platform with no further indications), where the relevant ticket-selling platform's website was itself mobile-friendly. Specifically, interactive plans of the theatre – which Opera websites frequently make available, allowing customers to choose where to sit – showed usability issues when navigated through mobile devices: content was not sized to viewport.

With regard to the languages used, eight out of the thirteen Opera Houses websites were found to provide English editions by August 2016 (Table 7) besides Italian. The Italian content was not always entirely translated, or translated in due time.

Table 7. English editions of Italian Opera Houses websites, August 2016

Opera House	English edition	Mobile-friendly English edition
Fondazione Petruzzelli e Teatri di Bari		
Teatro Comunale di Bologna		
Teatro Lirico di Cagliari	x	x
Maggio Musicale Fiorentino	x	x
Teatro Carlo Felice di Genova		
Teatro alla Scala di Milano	x	x
Teatro San Carlo di Napoli		
Teatro Massimo di Palermo	x	x
Teatro dell'Opera di Roma	x	x
Teatro Regio di Torino	x	
Teatro Lirico Giuseppe Verdi di Trieste	x	x
Teatro La Fenice di Venezia	x	x
Arena di Verona		

With the exception of the Teatro Regio (Turin), the Italian Opera Houses which run English editions of their websites also grant those pages' mobile-friendliness. Peculiarly, the most mobile-friendly of all the identified websites – the Arena di Verona's – only provides an Italian edition.

5   Discussion, Conclusions and Future Research

In our study, the thirteen Italian Opera Houses fully recognized as such were considered, including milestones in the world history of theatres like La Scala in Milano, La Fenice in Venice, and the Arena di Verona [24].

The goal of the study was to investigate the mobile web strategies of Italian Opera Houses focusing on the mobile-friendliness of the official B2C websites and on their m-commerce models.

The analysis of the mobile web strategies of the Opera Houses was based on a systematic process and free web tools.

First, the websites of the Opera Houses were tested against Google MFT [57], PageSpeed Insights [62] and Pingdom [63], in order to state their mobile-friendliness. These tools were chosen because of their consistency, reliability, ease of use and constant updating.

Second, the availability of e-commerce options was checked, as were their possible outsourcing – considering whether brand awareness and perception were preserved – and usability through mobile devices [65].

Finally, due to the need of targeting a wider international audience, and of a wider marketing effort to promote Opera as a tourist attraction, the availability of English-language versions was considered.

The results of our study reflect an unsatisfactory situation. None of the thirteen Opera Houses fully embraced a mobile web strategy. Three out of the thirteen Italian Opera Houses websites were not mobile-friendly at all, while only two of the mobile-friendly websites – those by La Scala and Arena di Verona – were found to be 100% compliant. Even cases where Google tests assess a 100%-good mobile experience fall under the usability problems raised by mobile-first approaches [8, 65, 66] (e.g., the horizontal navigation adopted by La Scala website in its home page).

From a technical point of view, the results highlight the predominance of responsiveness, adopted by all the ten mobile-friendly websites.

With regard to e-commerce policies, ten out of the thirteen Opera Houses allow to buy tickets online, and an outsourcing model is adopted – that is the transaction is supported by an external platform – but only three of the e-commerce carts found keep their Opera website's look-and-feel.

Concerning the languages used, eight out of the thirteen Opera Houses provide an English version. The Italian content was not always entirely translated, or translated in due time.

Italian Opera houses could use the results of our study to improve their mobile web strategies. In particular, results suggest that Opera Houses should revise their e- (and in turn) their m-commerce functions – supplying specific webpages from a ticket-selling platform, where the Opera House's look-and-feel is kept and the zooming feature of the theatre's plan is implemented to help the purchase process – and provide or improve their English content.

The process to analyse mobile web strategies that our study adopted – checking mobile friendliness, e-commerce and the availability of English-language versions – can be used for other sorts of cultural heritage institutions, like theatres, museums, art collections, or historic sites.

Future research is related to three areas: (a) analyze dedicated apps produced by Italian Opera Houses, in relationship with their web presence strategies; (b) extend the study to the "Teatri di tradizione"; (c) identify best practices to promote Opera as a tourist attraction through mobile devices.

A preliminary scouting of apps highlighted that only two of the Opera Houses considered in this study had produced a dedicated app by May 2016, while similar projects for kids were started but came to a halt. On the other hand, almost all the Opera Houses identified had lively social profiles on Facebook, Twitter and YouTube [67].

The second area of future research, concerning the "Teatri di tradizione", aims to cover all the Italian theatres where Opera is performed, even if not on a regular basis, taking into account their different missions and funding mechanisms.

Finally, the third area moves from the critical issues identified when assessing the websites of the Opera Houses: only a couple of them provide information on how to plan a trip that includes attending one or more performances, and even basic information on how to get to the theatre, or on the building as a place to visit, is missing. This area should also survey the websites and the apps of the tourist destinations where the theatre is located, to check if and how it is listed. [68]

References

1. Rasinger, J., Fuchs, M., Höpken, W., Tuta, M.: A customer based approach to discover accepted mobile information services in tourism. In: Research@EyeforTravel, London, 5–6 June, pp 31–46 (2006)
2. Buhalis, D., Law, R.: Progress in information technology and tourism management: 20 years on and 10 years after the internet - the state of eTourism research. Tour. Manage. **29**(4) 609–623 (2008). doi:10.1016/j.tourman.2008.01.005
3. Lee, J.K., Mills, J.E.: Exploring tourist satisfaction with mobile experience technology. Int. Manage. Rev. **6**(1) 92–102 (2010). doi:10.1007/978-3-211-69566-1_14
4. Schneider, S., Ricci, F., Venturini, A., Nota, E.: Usability guidelines for WAP-based travel planning. In: Gretzel, U., Law, R., Fuchs, M., (eds.) Information and Communication Technologies in Tourism 2010, pp. 125–136. Springer, Vienna (2010). doi:10.1007/978-3-211-99407-8_11
5. Wang, D., Park, S., Fesenmaier, D.R.: The role of smartphones in mediating the touristic experience. J. Travel Res. **51**(4), 371–387 (2012). doi:10.1177/0047287511426341
6. Peltier, D.: 6 charts that show mobile booking's gain on desktop around the world. Skift (2015). http://skift.com/2015/09/19/6-charts-that-show-mobile-bookings-gain-on-desktop-around-the-world
7. Abramovich, G.: July fourth online travel spend to top cyber Monday (2016). http://www.cmo.com/adobe-digital-insights/articles/2016/4/21/adi-us-travel-report-2016.html#gs.lygRu2M
8. Chaffey, D.: Mobile marketing statistics compilation (2016). http://www.smartinsights.com/mobile-marketing/mobile-marketing-analytics/mobile-marketing-statistics
9. Prentice, R.: Tourism and Heritage Attractions. Routledge, London (1993)
10. Borowiecki, K.J., Castiglione, C.: Cultural participation and tourism flows: an empirical investigation of Italian provinces. Tour. Econ. **20**(2), 241–262 (2014). doi:10.5367/te.2013.0278
11. Hughes, H.: Arts, Entertainment and Tourism. Butterworth Heinemann, Oxford (2000). doi:10.1002/jtr.394
12. UNESCO lists of intangible cultural heritage and register of best safeguarding practices. http://www.unesco.org/culture/ich/en/lists

13. Timothy, D.J., Boyd, S.W.: Heritage Tourism. Pearson Education, London (2003)
14. Mich, L., Kiyavitskaya, N.: Mapping the web presences of tourism destinations: an analysis of the European countries. In: Law, R., Fuchs, M., Ricci, F., (eds.) Information and Communication Technologies in Tourism 2011, pp. 379–390. Springer, Vienna (2011). doi:10.1007/978-3-7091-0503-0_31
15. Colbert, F., et al.: Marketing Culture and the Arts, 4th Edn. Hec, Montréal (2012)
16. Vasile, V., Surugiu, M.-R., Login, I.-O., Cristea, A.: Changes in cultural heritage consumption model: challenges and limits. Procedia Soc. Behav. Sci. **188,** 42–52 (2015). Elsevier Ltd. doi:10.1016/j.sbspro.2015.03.337
17. WTO - World Tourism Organization. Handbook on Tourism Destination Branding (2009). doi:10.18111/9789284413119
18. Laudon, K.C., Laudon, J.P.: Management Information Systems: Organizational and Technology in the Networked Enterprise. Prentice Hall, New Jersey (1999)
19. Feroni, G.C.: Organization, management and funding of opera houses, Florence. In: International Week for Cultural and Environmental Heritage - Florens 2012. Quaderno Cesifin 61 (2012). (in Italian)
20. Leon, A.F., Ruggeri, M.: Il costo del melodramma. Il Mulino, Bologna (2004). (in Italian)
21. Baumol, J.W., Bowen, G.W.: Performing Arts: The Economic Dilemma: A Study of Problems Common to Theater, Opera, Music and Dance. MIT press, Cambridge (1968). doi:10.1017/S0770451800055287
22. Heilbrun, J.: Baumol's cost disease. In: Towse, R., (ed.) A Handbook of Cultural Economics. Edward Elgar Publishing, Cheltenham (2013). doi:10.4337/9780857930576.00016
23. Mobile internet usage skyrockets in past 4 years to overtake desktop as most used digital platform, 13 April 2015. https://www.comscore.com/Insights/Blog/Mobile-Internet-Usage-Skyrockets-in-Past-4-Years-to-Overtake-Desktop-as-Most-Used-Digital-Platform
24. Ministero dei beni e delle attività culturali e del turismo. Fondazioni Lirico-Sinfoniche. http://www.spettacolodalvivo.beniculturali.it/index.php/fondazioni-liriche. (in Italian)
25. OECD. The Impact of Culture on Tourism. OECD Publishing, Paris (2009). doi:10.1787/9789264040731-en
26. UNESCO World Heritage, States Parties, Italy. http://whc.unesco.org/en/statesparties/it
27. FutureBrand. Country Brand Index 2014–15 (2014). http://www.futurebrand.com/uploads/CBI-14_15-LR.pdf
28. OECD. Tourism and the Creative Economy. OECD Publishing, Paris (2014). doi:10.1787/9789264207875-en
29. Richards, G.: Cultural tourism 3.0: the future of urban tourism in Europe? In: Garibaldi, R., (ed.) Il turismo Culturale Europeo. Città ri-visitate. FrancoAngeli, Milano (2014)
30. Salazar, N.B., Zhu, Y.: Heritage and tourism. In: Meskell, L. (ed.) Global Heritage: A Reader. Blackwells, Oxford (2015)
31. Kimbell, D.R.B.: Italian Opera. Cambridge University Press, Cambridge (1991)
32. Operabase. http://www.operabase.com/
33. Candidatura UNESCO Opera Lirica Italiana (2016). https://youtu.be/iNoTywhuI8U (in Italian)
34. Fisichella, C., Milito, A.M.: Indicators of Tourist Market Appeal and Sustainability: An Analysis of Italian Opera Houses, pp. 1–4. Bulletin of the International Statistical Institute (2007)
35. SL&A-Turismo e territorio. Osservatorio nazionale "Cultura e turismo: impresa e lavoro" (2015). http://www.ebnt.it/documenti/osservatori/Dati_Osservatorio_H_II_Edizione_2015.pdf. (in Italian)

36. Morelli, G., Fisichella, C.: Il turismo culturale nell'esperienza delle Fondazioni Liriche italiane (Cultural tourism in the italian opera houses' experience). Economia dei Servizi **1**, 85–106 (2014). (in Italian)
37. Ministero dei beni e delle attività culturali e del turismo. Opera lirica: Un patrimonio culturale italiano da valorizzare. http://www.beniculturali.it/mibac/export/MiBAC/sito-MiBAC/Contenuti/Ministero/UfficioStampa/News/visualizza_asset.html_84569120.html. (in Italian)
38. Wikipedia. Opera. https://en.wikipedia.org/wiki/Opera
39. Agid, P., Tarondeau, J.C.: The Management of Opera: An International Comparative Study. Palgrave Macmillan, London (2010). doi:10.1057/9780230299276
40. StatCounter. Mobile and tablet internet usage exceeds desktop for first time worldwide (2016). http://gs.statcounter.com/press/mobile-and-tablet-internet-usage-exceeds-desktop-for-first-time-worldwide. Accessed 1 Nov 2016
41. Nielsen, J.: Mobile Millennials: Over 85% of Generation Y Owns Smartphones. Newswire (2014). http://www.nielsen.com/us/en/insights/news/2014/mobile-millennials-over-85-percent-of-generation-y-owns-smartphones.html
42. Euromonitor. The New Online Travel Consumer (2014). http://www.etoa.org/docs/default-source/presentations/2014-the-new-online-travel-consumer.pdf
43. Amadeus. Future Traveller Tribes 2030. Amadeus, Madrid (2015). http://www.amadeus.com/documents/future-traveller-tribes-2030/travel-report-future-traveller-tribes-2030.pdf
44. WTM - Travel Market. World Travel Market Global Trends Report (2015). http://news.wtmlondon.com/wp-content/uploads/2015/11/Global-Trends-Report-2015.pdf
45. Teatro alla Scala. Box Office. Tickets and prices (Official Ticket Office). Concessions. Young People and Promotions. http://www.teatroallascala.org/en/box-office/tickets-prices/concessions/young-people-and-promotion/young-people-and-promotions.html
46. Corriere della Sera. Giovani in coda di notte per la Scala (2016). http://milano.corriere.it/foto-gallery/cronaca/16_novembre_05/giovani-coda-notte-la-scala-bd9f7d74-a33e-11e6-b242-6c6c02e892ab.shtml. (in Italian)
47. Giovani per il Teatro Massimo. http://www.teatromassimo.it/eng/education-and-young-audiences/giovani-per-il-teatro-massimo.html
48. Gibbs, C., Gretzel, U.: Drivers of responsive website design innovation by destination marketing organizations. In: Tussyadiah, I., Inversini, A. (eds.) Information and Communication Technologies in Tourism 2015, pp. 581–592. Springer, Cham (2015). doi:10.1007/978-3-319-14343-9_42
49. Groth, A., Haslwanter, D.: Perceived usability, attractiveness and intuitiveness of responsive mobile tourism websites: a user experience study. In: Tussyadiah, I., Inversini, A. (eds.) Information and Communication Technologies in Tourism 2015, pp. 593–606. Springer, Cham (2015). doi:10.1007/978-3-319-14343-9_43
50. Marcotte, E.: Responsive Web Design (2010). alistapart.com/article/responsive-web-design
51. Budiu, R.: The State of Mobile User Experience. Nielsen Norman Group (2015). www.nngroup.com/articles/mobile-usability-update
52. Mich, L., Peretta, R.: Italian flagship museums: web presence and mobile-friendliness (2016). http://ertr.tamu.edu/files/2016/01/ENTER2016_submission_119.pdf
53. W3C. Scope of mobile web best practices. https://www.w3.org/TR/mobile-bp-scope/
54. W3C. Mobile web application best practices. https://www.w3.org/TR/mwabp/
55. W3C. Standards for web applications on mobile: current state and roadmap. https://www.w3.org/Mobile/mobile-web-app-state/
56. W3C. The W3C mobile checker. https://www.w3.org/2016/11/mobile-checker-disabled/
57. Google. Mobile-friendly test. www.google.com/webmasters/tools/mobile-friendly
58. Google. Mobile-friendly websites. https://developers.google.com/webmasters/mobile-sites/

59. Google. Make sure your site's ready for mobile-friendly Google search results. https://support.google.com/adsense/answer/6196932

60. Kaikkonen, A., Kekäläinen, A., Cankar, M., Kallio, T., Kankainen, A.: Usability testing of mobile applications: a comparison between laboratory and field testing. J. Usability Stud. **1** (1), 4–16 (2005)

61. Wroblewski, L.: Mobile First. A Book Apart, New York, NY (2011)

62. Google. PageSpeed Insights. https://developers.google.com/speed/pagespeed/insights/

63. Pingdom website speed test. https://tools.pingdom.com

64. Wikipedia. Pingdom. https://en.wikipedia.org/wiki/Pingdom

65. Nielsen, J.: Mobile Usability 2nd Research Study. Nielsen Norman Group (2011). www.nngroup.com/articles/mobile-usability-2nd-study

66. Budiu, R., Pernice, K.: Mobile First is not Mobile Only. Nielsen Norman Group (2016). www.nngroup.com/articles/mobile-first-not-mobile-only

67. Mich, L., Peretta, R., (eds): The Web Presence of Opera Houses, Working paper. University of Trento, Trento (2016a)

68. WTO - World Tourism Organization. Conceptual Framework. Destination Management & Quality Programme (2016). http://destination.unwto.org/content/conceptual-framework-0