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Transmitting Knowledge of Urban History Through Digital Museum

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Transmitting Knowledge of Urban History Through Digital Museum

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Abstract

The dissemination of knowledge on urban history has always had an essential role in the promotion of cultural heritage. In particular, in order to reach every part of society, development of 'public communication' is the main strategy. Besides, in multi-layered areas, different urban forms from the past, their relation with each other and their links to tangible and intangible values affect contemporary urban form as well as the notion of cultural heritage, and this creates complete understanding. Transmitting this complexity is challenging. In this context, 'digital technologies' provide an alternative way to achieve historic research through digital tools introduced by Information and Communication Technologies (ICT). Moreover, digital museums offer an innovative way for visitors to reach/interact with/gather museum information.

Due to a continuous change affected by cultural, political, economic and ideological changes, İstanbul represents a complex case study within the historical research framework. In this paper, the modern city centre of İstanbul, Taksim Square, will be examined by focusing on how its historical research and analysis is achieved through digital technologies. In addition, a possible digital museum prototype is introduced to enrich the museum's public communication for transmitting knowledge, and the museumification of its urban history.

Introduction

The definition of ''cultural heritage'' includes the tangible and intangible values that we received from the past, and currently, that we transmit to the future generations (Jokilehto 2005). Moreover, the International Council of Museums expresses the museum's role in the conservation of these tangible and intangible heritage values of humanity (ICOM 2018). In other words, museums can be conceived as heritage places itself. On the other hand, the museums represent a strategic role for the spread of cultural heritage knowledge as they have the ability to appeal to their visitors. Therefore, in addition to being heritage places, museums are the first places that affect directly public communication (Parry 2013). However, historical accuracy and the correct interpretation of urban history are crucial concerns to the conservation of urban heritage with community involvement. Accordingly, the importance of city museums should be underlined to create a better understanding of urban history. In this context, the crucial point is to generate free accessibility to reach each part of the society and make the information understandable not only for specialist but also non-specialists (Tamborrino 2014). In a parallel of traditional analyses of historical research, the development of digital technologies provides new interpretation solutions (Warwick and Terras and Nyhan 2012), and offers new ways for the preservation of heritage (Calabi 2014). Furthermore, with the spread of mass-media usage, digital museums represent the strategic participation to respond to the change of needs that emerged with the digital era (Grau and Wendy and Viola 2017, Parry 2013). Hence, the planning of a digital museum affects directly to change / shape / rewrite of public awareness as well as urban history (Hossaini and Ngaire 2017). These possibilities could cause misinterpretations of the urban history, and as a result of these misinterpretations, fostering the cultural heritage could fall under the risk due to the transmitting a falsification of history.

Under the framework of complex case studies, in particular, in multi-layered urban areas, the risk of the falsification of history becomes a crucial point to consider. Analyzing several related dynamics with a range of chronology that interpenetrates within each other carries risks. As an innovative alternative offered by the digital era, digital tools pave the way to make possible to have a comprehensive analysis of historical outcomes with qualitative and quantitative approaches. Within the last decade, although the visualization and spatialization of the data have perceived as a part of the methodology (Bodenhamer and Corrigan and Harris 2010), they also provide an essential contribution to creating public communication. In other words, having visual qualification, this approach could be considered as an integral part of the traditional analyses and written texts.

Under the context of mentioned above, falsification of history and misinterpretation risks, the urban history as a part of its cultural heritage discourses of Taksim – Maçka Valley in İstanbul represent a significant case study to express. The urban history of the area started as a necropolis when it was known as the ''endpoint of the İstanbul'' until 16 th century. Then, the area has gained a social and physical direction with the construction of Maksem[1] in 1732. As in the traditional cities, the water distribution point created a meeting point for the habitants of the district. After the Tanzimat Charter, in 1839, the area was declared as a military area, and a ''barrack construction movement'' was started. Meanwhile, the concept of public parks in the Ottoman capital showed up. In 1869, Taksim Garden was realized in the area becoming a promenade favorite of the district. Thus, the area started to be perceived as a public park. With the First World War period, the barracks on the area were abandoned, and the pure perception of the area as a public park has marked its place in the urban memory.

The fate of Istanbul, the old capital city of the Ottoman Empire, changed with the end of the First World War. Ottoman Empire collapsed, and in 1923, the Republic of Turkey was founded under the leadership of Mustafa Kemal Atatürk. This new period was the initial point of a modernization process in order to modernize the country's political and social structure and replace the previous Empire symbols with secular values. After the declaration of Ankara as the new capital, İstanbul lost its status. However, modernization of a city such İstanbul was a crucial concern as the city should represent the modern face of the Republican ideology. Accordingly, French architect-urbanist Henri Prost was invited to conduct the first modern urban plan of İstanbul. Based on Prost's open spaces approach in İstanbul, the main idea was to modernize

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[1] This building named ''Maksem'' -meaning 'place of distribution'- is the origin of the name of the Taksim district. Turkish word Taksim means 'division' or 'distribution'.

the social life through modern public spaces that did not exist in Ottoman traditional life. Achieving this aim has led to the shaping of Taksim – Maçka Valley by integrating 'green spaces' with 'public buildings'. In other words, by supporting Taksim's existing public identity coming from the Late Ottoman Period, Prost prepared a plan for Taksim – Maçka Valley (named as Plan Park No 2) by conceiving as a public park with continuous public functions. His plan was realized in the 1940s (see Figure 1). His vision made Taksim Republican Square as a modern city center of İstanbul. In addition, Gezi Park was formed to the place of demolished Topçu Barracks. The park became the first public park where women and men easily and freely could enjoy daily life together.

Figure 1.   Taksim Square in 1940s[2] (Atatürk Library).

Henri Prost served as chef urbanist of İstanbul planning until 1951. After his leaving, the deteriorations on the area started quite slowly but showing continuity. The initial formation notions of the Valley as to be public and green have had different alterations. The globalization policies that have started since the 1950s were the main reasons for the decision taking. The reflections of the policies have been caused to set legislation changes and to emerge implementations without a holistic masterplan for the area. With the 1980s, the privatizations have been increased under the framework of the capitalist system. As a result of these transformations, urban identity and urban memory and visibility of the historical values have been changed (Bolca, Tamborrino and Rinaudo 2018).

In 2013, the Valley, together with Taksim Square and Gezi Park, became the subject of intensive discourses. The decision of the reconstruction of Topçu Barracks by demolishing Gezi Park caused objections. In particular, the fact that the square and park protected by a national protection act increased the debates in every segment of society. As a result of the mentioned above dynamics, and the combination of the square's political identity, Gezi Protests were started in order to prevent the destruction of Gezi Park. Through the integration of social media, the protests were spread all over to Turkey as well as the world. Finally, the reconstruction project was canceled. However, Gezi Park's identity as the Cultural Heritage of the Republic was/is still under discussion.

As mentioned above reasons, Taksim - Maçka Valley represents a comprehensive case study to analyze its urban history by reflecting an accurate narrative. In addition, transmitting the knowledge of this part of the city matters in order to create public awareness for its cultural heritage value. Accordingly planning of a digital museum offers an innovative way to experience fostering values of this historic urban landscape. This article aims to present the quantitative and

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[2] Photographed by Paysagiste L. Ceraz

qualitative analyses of the area developed with digital tools. In parallel, the main focus is related to articulate the strategic organization of a prototype web-site as a digital museum.

From Archives to Qualitative and Quantitative Analyses

In order to understand the complex changing dynamics of this urban area, the Geographic Information System allows organizing data with spatial reference, overlapping of the different maps from different chronology in the same accuracy. This peculiarity provides to generate a comparative study rectifying different information. On the one hand, the system provides qualitative analyses by the juxtaposition of different historical maps and current situation. On the other hand, it offers computational results to reveal the quantitative changes. In addition, during recent years, the usage of GIS and 3D modeling apply together to cultural heritage studies. In particular, 3D reconstruction of a historic environment creates a complementary solution to the 2D analyses of the maps.

Accordingly, during the Taksim – Maçka Valley research, archival research has been done to collect the historical maps of the area, urban plans, urbanism program, and related historical photos of Henri Prost. The first aim was to have a physical comparison for the pre/post situations of Prost's contribution to the area. The second aim was to understand the continuous urban transformations after the 1950s. Therefore, firstly, the most recent historical map produced before the Republican Period, was selected to apply as a base map. Secondly, Prost's maps and urban plans have been elaborated in order to understand his vision and realized ideas on the urban area. Thirdly, a detailed list has been organized according to chronological turning points and gathered the type of data (see Table 1).

The gathered information varies from the type of sources. In order to analyze Prost's two primary integration of 'green spaces' and 'public functions', open – built-up areas, green areas, and lot dimensions were the principal useful information. As a result of the accurate juxtaposition of the related sources, the spatial GIS analysis further indicated that there has been a considerable change in urban land use since then. According to the information gathered from the aerial photos through GIS, the overlay of the green spaces has a decreasing ratio since the 1950s. When Prost finished his service in Turkey in 1951, the ratio of green spaces to the total area was 76%. Nevertheless, in 2017, the presented ratio was 28%. On the other hand, when Park No 2 has realized, the ratio of public buildings to the total built-up area was 73%, and in 2017, the ratio was 48%.

Moreover, as a complementary approach, the urban transformation visualized by 3D reconstruction. The comparison of two periods shows the high-rise constructions and impacts on the built environment and green area. In other words, 3D visualizations made more understandable the traditional approach, which is 2D architectural drawings always challenging to interpret by non-specialists.

By 3D modeling techniques and processing data by GIS, the visualization of the relationship between these notions and the topography and plan settlement has helped to investigate the fundamental principles of his planning decision as well as the change in the history of Istanbul and understanding the Cultural Heritage. Regarding the overall qualitative and quantitative results processed with the sources gathered from archival researches, it is noteworthy that Gezi Park – designed by Henri Prost - is an essential achievement of the remnants of the Prost legacy by representing two main parameters: green space and public functions3 (Figure 2).

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3 For the GIS outcomes was used ArcGIS. In addition, Rhinoceros software was used for the produce 3D visualizations.

Table 1.   Type of sources.

Period	Year	Type of resource
Before the Republic	1922	Plan d'Ensamble De La Villa De Constantinople (cartographic map) Scale: 1:17500. Source: Harvard Map Collection
1923 – 1950	1938	Plan Park No 2 (raster imagine). Scale: 1:2000. Source: Atatürk Library
	1939	Planning of Taksim Square, The Republic Square and the İnönü Esplanade in Taksim (raster imagine). Scale: 1:500. Source: Atatürk Library
	1939	Planning of Beyoğlu - Taksim gardens and amphitheatre (raster image). Scale: 1:500. Source: Atatürk Library
	1939	Taksim Amenagement des Terrains De La Caserne. Scale: 1:500. Source: Fonds Henri Prost, Paris
	1939	Şişli-Valikonağı Playground Project (raster imagine). Scale: 1:200. Source: Atatürk Library
	1940	Plan Park No 2 (raster imagine). Scale: 1:2000. Source: Fonds Henri Prost, Paris
	1940	Plan de Référence (raster imagine). Source: Fonds Henri Prost, Paris
	1943	The İnönü Esplanade in Taksim (cartographic map). Scale: 1:500. Source: Pervititch Map Collection in Atatürk Library
	1944	Beşiktaş Stadium Project (raster image). Scale: 1:500. Source: Atatürk Library
	1946	Aerial Photos Source: IBB[4], Online Archive
1950 - 2017	1966,1982 2002, 2017 2010, 2016	Aerial Photos Source: IBB, Online Archive Google Earth Images Source: Google Earth Pro Maps Cadastral Map Source: IBB
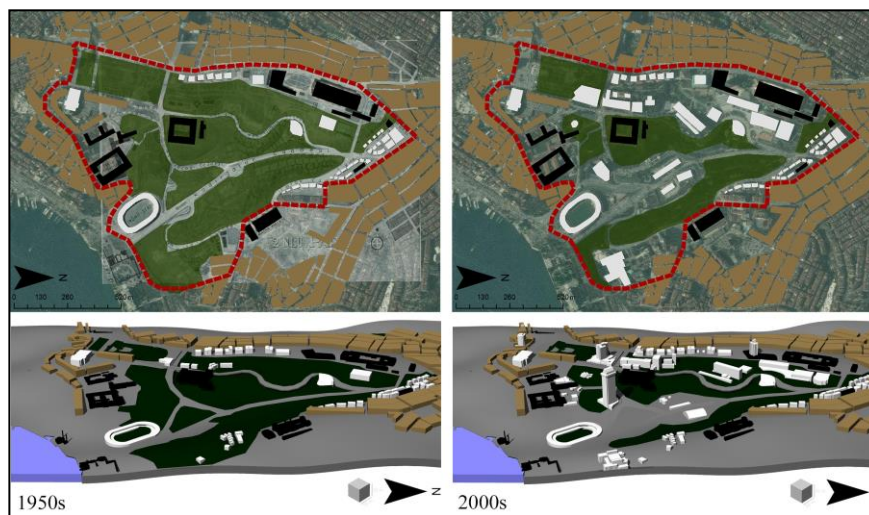
Figure 2.

The comparison of Taksim – Maçka Valley in 1950s and 2000s.

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[4] IBB: Istanbul Metropolitan Municipality (İstanbul Büyükşehir Belediyesi)

Museumification of the Historic Urban Landscape of Taksim – Maçka Valley

The general definition of museumification can be defined as ensuring the conservation of heritage and at the same time, creating an ambient by qualifying conditions in order to reach the community under the fostering the knowledge (Minissi 1988). The adaptation of this concept to the historic sites had firstly experienced for the archaeological areas. The main aim was to respect the topographical authenticity of the monument and the integrity of the historic environment. Currently, the definition integrates both tangible and intangible heritage values. Besides, regarding the development of the ''Historic Urban Landscape'' concept as a part of cultural heritage (UNESCO 2011), the museumification concept could be adapted to these areas. Furthermore, with the span of the possibilities coming with the digital era, the museumification of the historic urban landscape could be perceived as a part of the digital museum.

Taksim – Maçka Valley gained world-wide attention with the Gezi Protests in 2013. Accordingly, easy access to correct information was needed. Social media guided the transmission of information in, both national and international contexts (Demirhan 2014). In such cases, social media has absolute power over the community, and therefore, the concern of which information should be presented to social media plays a crucial role in order to prevent the falsification of history. Besides, making the right choice for both visitor and museum was one of the principal criteria for the planning of a digital museum (Hossaini and Ngaire 2017). The presentation of reliable qualitative and quantitative analyses can sustain the historical accuracy of knowledge. Therefore, the planning of a kind of digital museum for the Taksim – Maçka Valley was processed by avoiding historical falsification risks. The central division of the sitemap was made based on the need to underline the breaking points of the area's urban history (See Figure 2). In the historical background section, the turning points of the area since 16 th century were explained. As mentioned before, Henri Prost was the key figure for the planned formation of the historic urban landscape. Therefore, based on both qualitative and quantitative analyses, the museumification of the Taksim – Maçka Valley has generated by considering the pre/post period of Henri Prost (Plan Park No 2 and After 1950s). In order to make the assessments of urban transformations more understandable, the ''Changes in the Time'' section was organized as a virtual exhibition. In this section, two main notions of the formation process were analyzed and presented with qualitative and quantitative results provided mainly by GIS. Besides, changes in urban memory and telling history were portrayed by a series of visualizations, animations, and videos produced with 3D reconstructions and a sequence of historical photo integrations.

Going back the notion of the museums as a place of heritage, it can be argued that archival function falls into the museum's area of responsibility. The aims of collecting, managing of data, and transmitting knowledge are not limited to the concentration with a museum, but extended to the organization of the museum archives. Since web 2.0 has brought accessibility to a new word, digital archives, digital collections, and several databases on various matters have been developed in the digital era.
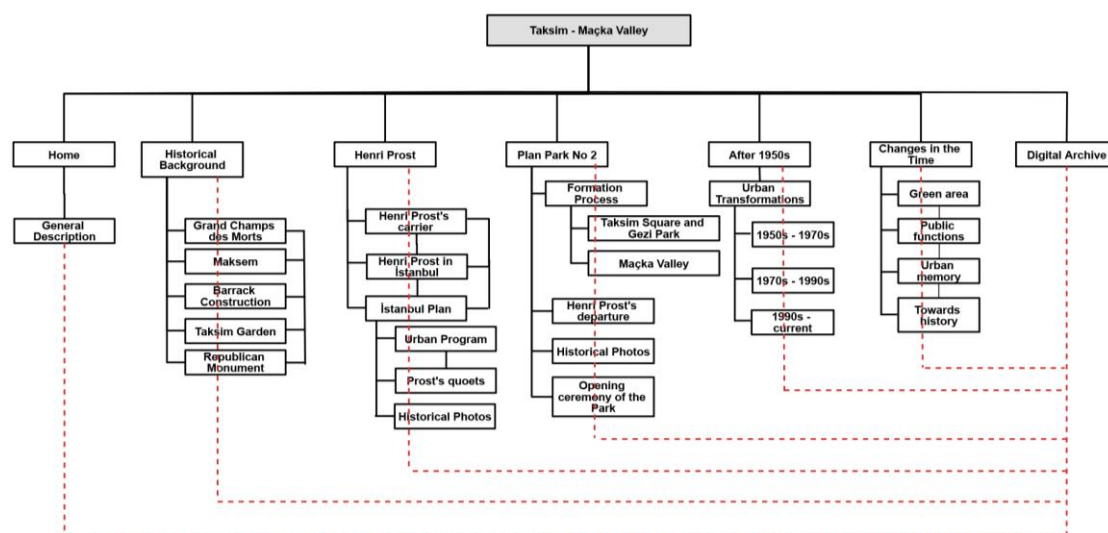
Figure 2.   Sitemap scheme of the organization.

Accordingly, during the research of Taksim – Maçka Valley, the sources provided by several digital archives and databases were utilized. However, as in traditional methods, the sources reliability, the content accuracy on the website, and the creator behind the available content were essential to building a trust system (Chung, Yoonjae and Michael 2012). Besides, creating a network connection between the related databases give the visitor the possibility to access further information and expand the knowledge. Therefore, within the organization of Taksim – Maçka Valley digital museum, each source has direct access to used databases. Each section and subsection is directly connected with the digital archive. For instance, on the one hand, the visitors have a direct connection with the online database of Fond Henri Prost created by Cité de l'architecture et du patrimoine (IFA). On the other hand, they can reach the database organized by the Union of Turkish Engineers and Architects (UCTEA) for the ongoing lawsuit process of Gezi Protests. In addition, used maps and literature sources were listed with their collocations in the digital archive by easing to connect with creators' or scholars' personal pages.

Conclusion

The promotion of cultural heritage through city museums is crucial. Transmitting knowledge and engaging with public communication enrich the conservation of cultural heritage. In recent years, the complex history of Taksim – Maçka Valley, as a historic urban landscape, presents a complex subject. It needs to be transmitted its urban history and historical values to the community. Museumification in the digital platform combines the broader concept of the notion of city museum in macro-scale with the historic urban landscape in the micro-scale. In this study, digital outcomes, visual narratives, and virtual exhibitions were all produced with the aim to reach every segment of the community. The direct connections with other databases and digital collections helped to create an information network system. A digital archive collection could set the bases of a comprehensive literature review on this matter for future researchers. Briefly, the main aims of experiencing the digital museum with this case study have been achieved as a prototype and created a scientific premise for future developments.

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