Chapter 18
Digitization of Cultural Heritage:
The Farnese Theatre in Parma

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ABSTRACT

Cultural heritage represents the identity of people and, as such, is a fundamental element of our lives. The numerous projects carried out in recent years in the field of CH digitization have shown that the operation of dematerialization may be considered an essential tool for its preservation, conservation, and enhancement. Since advanced technology allows to valorize artifacts and bring a positive impact on the people's life to whom they belong, in the context of Society 5.0 it can be considered as a key tool. Starting from the analysis of the state of the art in the field of digitization, the main goal of the present study is to investigate the role that this process can take on within the complex process of valorization of monuments. To this aim, a research carried out on the Farnese Theatre will be illustrated. Particular attention will be paid to the methodological choices made for the creation of an extremely versatile three-dimensional model and for its possible uses.

INTRODUCTION

The numerous projects carried out in recent years in the field of digitization of Cultural Heritage have shown that the operation of dematerialization may be considered an essential tool for its preservation, conservation and valorization. The digital technologies that are used with this aim can be considered as a key tool within the "Society 5.0". As well known, this concept was introduced in the 5th Science and Technology Basic Plan adopted by the Japanese Cabinet in 2016. This term refers to a human-centered

society, in which the goal is to improve people's quality of life by using advanced technology in different fields (healthcare, environmental, transport, production and so on).

In recent years, in fact, a rapid and continuous evolution of digital and information technologies has taken place, and today they able to produce extraordinary potentialities. Among the fields interested, particular attention should be given to the cultural one. In this field, new technologies can really produce extremely positive impacts, both from a social and economic point of view, both on an individual and collective level.

A recent research funded by the European Spatial Planning Observation Network (ESPON) called "HERIWELL - Cultural Heritage as a Source of Societal Well-Being in European Regions" has clearly highlighted the positive impacts that Cultural Heritage can have on the society. In the final report drafted at the end of the research (ESPON, 2021), a link between social welfare and Cultural Heritage was identified. It is interesting to note that the short- and long-term outcomes regard all types of heritage: tangible, intangible or digital.

The impacts identified concern first of all people's quality of life: "growth in happiness and life satisfaction, improvements in eudaimonic conditions and health rates, improvements in education levels and empowerment in adults' capacities, including digital skills, higher levels of knowledge and research, improved quality and sustainability of environment" (ESPON, 2021, p. 20). This report also identifies additional positive impacts, mainly related to material and social factors. For the latter, the most interesting effects are related to increasing community awareness, greater sense of belonging and social inclusion.

It is also true that, during the lock-down period, caused by the pandemic situation related to the spread of the SARS-COV-2 virus that began in 2020, the benefits just mentioned were inevitably denied to society. A survey conducted as part of this European research, specifically aimed at assessing the individual perceptions of citizens on the relationship between Cultural Heritage and their well-being, showed clearly that the restrictions adopted for health reasons created a negative impact on the population. All citizens of the eight European countries involved in this survey (Belgium, Czech Republic, Germany, Ireland, Italy, Norway, Poland and Spain), despite coming from very different cultural backgrounds, declared a strong sense of exclusion related to the fact that they no longer had access to Cultural Heritage.

On the other hand, in order to deal with the temporary restrictions adopted, new ways of alternative use of heritage were widely experimented. These included also virtual solutions. In that period, the increasingly pressing need to share knowledge virtually was favored by the fact that new technologies make it possible to overcome the normal space-time limits, offering the possibility of extending the spectrum of users of Cultural Heritage (Agostino, Arnaboldi & Lampis, 2020).

However, the current pandemic situation is not the only problem. In fact, we live in a historical moment in which, in the name of "globalization" that affects any field today, national boundaries are crossed and the historical memories of a single population, from heritage of a specific territory, become heritage of the whole humanity. It is important to stress that all the assets are vulnerable, often in danger. Natural disasters, armed conflicts, neglect, vandalism and so on, have always caused (and still cause) the more or less significant destruction of unique and unrepeatable artifacts (Figure 1). Despite their intrinsic value is universally recognized, even today we still witness too often the destruction of documents, buildings and even entire cities. It is clear that these events destroy the memory and identity of the populations (Bevan, 2016).

The events currently taking place in Ukraine demonstrate once again the fragility of heritage. After the Russian invasion on February 28, 2022, UNESCO adopted immediately the procedures established by the 1954 "Hauge Convention for the Protection of Cultural Property in the Event of Armed Conflict".

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