

Chapter 14

Cultural Tourism, Internet of Things, and Smart Technologies in Museums

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ABSTRACT

In this chapter, the author explores the application of the internet of things (IoT) in museums. IoT technology typically combines physical objects with hardware and software. For museums, the simplest example is 3D virtual tours, which need a computer and an internet connection. Today, however, museums have become more complicated with virtual and augmented technologies. Virtual and augmented reality devices, such as virtual reality (VR) glasses, and related applications, such as Google Arts and Culture, provide interactive museum tour experiences for visitors. For all these experiences, they only need to connect to the internet with their devices. Virtual museum tours range from history to space technologies. This chapter explores the nature of using IoT technologies in cultural tourism, especially in museums.

INTRODUCTION

Nowadays, many objects are connected thanks to the internet while IoT technologies have spread worldwide. They are applied in various sectors, including energy, manufacturing, logistics, education, health, and tourism. While the current COVID-19 pandemic has affected many sectors, one of the worst affected is tourism. IoT technologies have put a different complexion on the hospitality industry because of their tremendous potential to avoid physical contact. The use of IoT in smart museums, which is the focus of this chapter, is mainly related to visitor experiences. Mobile devices and wearable technologies, such as virtual or augmented reality glasses, have improved services in museums. The digital transformation accelerated by the COVID-19 pandemic means that business processes are conducted with fewer and fewer people while purely virtual activities have rapidly become popular, although they had previously not seemed likely in the near future. During the pandemic, many museums in Turkey started offering virtual tour services (e.g., İzmir Atatürk Museum, Museum of Troy, Republic Museum), which has started

DOI: 10.4018/978-1-7998-8528-3.ch014

a much bigger transformation. While this transformation makes museums accessible to larger masses, virtualization may also alienate traditional museum visitors. Nevertheless, given the new generation's technological ability and the pandemic situation, traditional museum visits will clearly differentiate with these new forms namely virtualization. One of the most important ways to understand this differentiation is by understanding the basic logic of IoT technology. This will allow us to predict changes in museology activities and museum visits, and identify how cultural tourism will evolve in this new context.

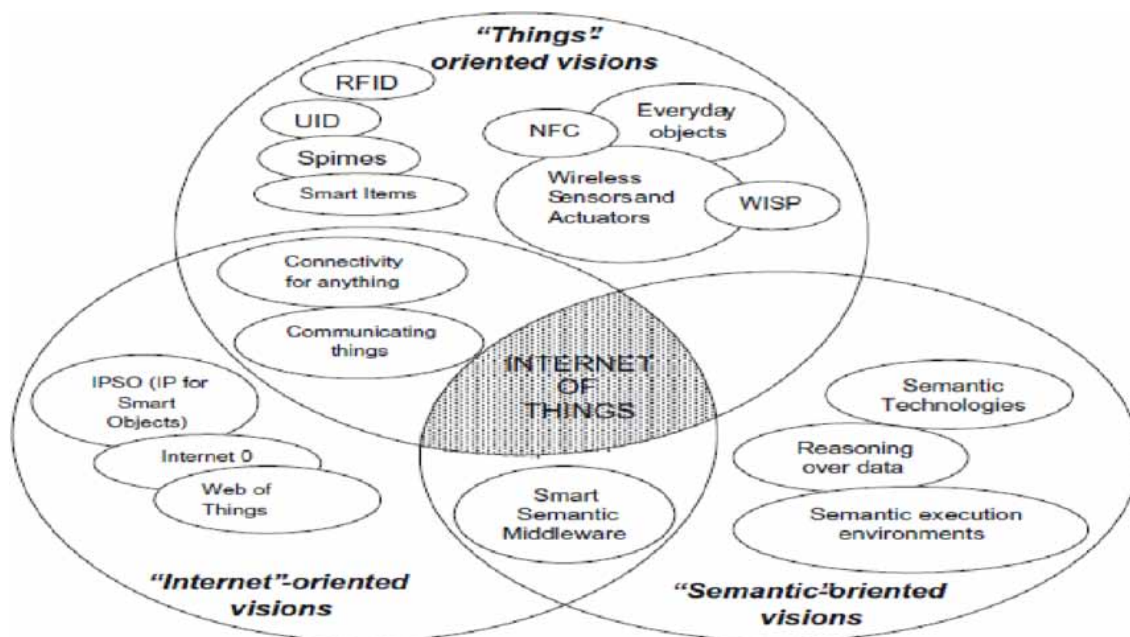
BACKGROUND: WHAT IS IOT?

Today, there is not yet a conceptual consensus about IoT (Wortmann & Flüchter, 2015). Weiser (1991) predicted that hardware and software items connected by cables, radio waves, and infrared would become very common, but he did not term it IoT. IoT began to improve after the Auto-ID Centre in the Massachusetts Institute of Technology (MIT) invented inter-company RFID (Radio Frequency Identification) infrastructure in 1999. In a presentation in 1999, Kevin Ashton became the first to mention IoT (Ashton, 2009) while Gershenfeld (1999) used a similar notion in his book "When Things Start to think" (Mattern & Floerkemeier, 2010).

The IoT paradigm emerged from the convergence of the three main visions indicated in Figure 1. Essentially, IoT is the capability of things to work interoperability and actively exchange information exchange according to predefined plans (Report, 2008, pp. 4). The following section describes these three basic visions that generate IoT.

Figure 1.

Source: Atzori et al., 2010: 3



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