The Value of Augmented Reality from a Business Model Perspective

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Abstract

Adopting modern technologies has become essential for tourism organisations wishing to remain competitive and economically viable. Augmented Reality (AR) is recognised as a tool to add value, enhancing tourist experiences, increasing revenues, sustainability, and competitiveness. However, despite its potential, AR implementation in cultural heritage tourism is limited. A gap exists identifying Business Models (BMs) as effective tools to explore the added value and realise AR's full potential. Using the case of Geevor Tin Mine Museum, the study explores the value of AR from a BM perspective, focusing specifically on the Value Proposition (VP), to examine how AR creates value for both visitors and stakeholders. Fifty stakeholder interviews reveal support for AR, recognising a number of ways it can add value. For visitors, it is suggested AR would enhance education, and accessibility, whereas for staff it could preserve knowledge and increase job security. The study bridges a gap between the potential of AR and realisation of its actual value-adding benefits. Practically, the research helps practitioners understand the value of AR for both visitors and stakeholders, thus moving a step closer toward meaningful implementation.

Keywords: Business Model, Augmented Reality, Cultural Heritage Tourism, Sustainability

1 Introduction

To regain and sustain competitiveness, tourist organisations are in need of new technologies that add value, to create an enhanced experience by adding elements of interactivity and entertainment (Garcia-Crespo et al., 2009). In recent years, AR has become a buzzword, praised for its ability to change the user's view of their surroundings (Wang et al., 2013). However, few BMs are successfully exploiting AR technology (Kleef et al., 2010), and it remains under-utilised in the field of tourism; and even more so in cultural heritage tourism, given the benefits and potential it presents (Cranmer & Jung, 2014). BM innovations have the power to spark disruptive industry-wide change (Cantanmessa & Montagna, 2016), but introducing technologies does not guarantee competitive advantage (Amit & Zott, 2012). Therefore, prior to implementing new technologies such as AR, it is imperative organisations understand its full potential and value-adding benefits. Using the case of UNESCO-recognised Geevor Tin Mine Museum, this study explores the potential added value of implementing AR from a BM perspective, focusing specifically on the VP element and the value created for both visitors and stakeholders.

2 Literature Review

BMs have been subject to debate for over 50 years (Wirtz et al., 2016), but despite this, no clear definition or outline of their key components exists (Lambert &

Davidson, 2013). The concept is considered 'fuzzy' (Al-Debei & Avison, 2010; Magretta, 2002) and underdeveloped despite its long history (Wirtz et al., 2016). Nevertheless, BMs are considered essential (Magretta, 2002), and praised for their ability to secure and expand competitive advantage (Johnson et al., 2008). In simple terms, BMs focus on creating value and capturing returns from that value (Chesbrough, 2007). The use of BMs intensified because of the internet boom and technical advancements (Al-Debei & Fitzgerald, 2010), and they are now considered necessary for success, so much so that it has been suggested "a better business model often will beat a better idea or technology" (Chesbrough, 2007, p.12).

Continual technological developments have had a huge impact on tourism, increasing the need for organisations to find new ways to improve marketing presence and increase competitiveness (Tscheu & Buhalis, 2016). Which created many changes, such as revolutionising the way tourists access and explore information on the move (Jung et al., 2015) and increasing demand for unique 'info-cultural-tainment' experiences (Palumbo et al., 2013). Thus, investing in (Tscheu & Buhalis, 2016), implementing and adopting modern technologies is considered a necessity (Jung et al., 2015), to increase competitive advantage and sustainability (Cranmer et al., 2016). AR is recognised as a tool to add value (Cranmer & Jung, 2014), creating unique memorable tourist experiences (Yovcheva et al., 2013), and increasing visitor numbers (Palumbo et al., 2013). However, there is a gap in research identifying BMs as tools to guide tourism organisations in the adoption, implementation and exploration of AR's full potential (Cranmer & Jung, 2014). Hence, this paper focuses on the essential aspects of value creation and value capture within the VP. The VP includes two approaches; how an organisation creates value for customers, and how an organisation and its stakeholders create value for all parties involved (Al-Debei & Avison, 2010). The study explores the potential added value AR would create for both visitors and stakeholders at Geevor Tin Mine Museum, Cornwall, UK.

3 Methods

Using the case of Geevor Tin Mine Museum, the study explores a multi-stakeholder perspective towards the development and creation of value, for both visitors and stakeholders, from AR implementation. Stakeholder analysis was performed, identifying five stakeholder groups; 9 of Geevor's internal stakeholders (G1-G9), 6 Tourist Bodies (B1-B6), 3 Tertiary groups (T1-T3), 2 Local Businesses (L1-L2) and 30 Visitors (V1-V30). In total, 50 semi-structured interviews were conducted with members of these groups between March 2015 and February 2016. Due to the exploratory nature of the study, a semi-structured interview approach allowed the freedom to add to and extend questions providing more flexibility and increasing the quality of data. Non-probability sampling was used to interview all stakeholder groups except visitors, where it was more practical to employ convenience sampling. Prior to interviews respondents were shown a short AR application video demonstration and provided with an AR information sheet, to ensure their knowledge of AR was proficient to adequately participate in the interview. All interviews were recorded and transcribed and data were analysed using content analysis, to systematically reduce the data into manageable amounts and support the identification of themes to categorise, compare and contrast data.

4 Findings and Discussion

4.1 Value of AR for Visitors

Guided tours are a valuable part of the museum experience, however internal stakeholders identified that during busy periods funding constraints mean there are not enough staff available to run the tours. Thus, they suggested creating an AR self-guided tour to supplement existing tours, ensuring all visitors shared the same level of experience and had the freedom to explore the site at their own pace and leisure. T2 added that it would also bypass the need for visitors to pre-plan and organise their trip to coincide with tour times. Using AR tours, it was believed "visitors would be looked after a bit better" reducing their gap in knowledge (G8), and visitors felt it would also create a more memorable experience (V4, V12, V16, V18, V23, V25), benefits of AR that are also recognised by literature (Yovcheva et al., 2013). However, stakeholders, in particular internal stakeholders, felt AR should be offered as a complement to existing guided tours, not a substitute or replacement

Stakeholders also identified that AR could be used to, improve access for visitors with impairments, disabilities, learning difficulties or those where English is not their first language. For example, French and Dutch visitors (V12, V16) argued that translating an AR experience into different languages would add considerable value to their visit, meaning they do not have to "fill in the gaps" or "make their own stories". Thirty percent of the visitors interviewed were foreign, which confirms the value of using AR to increase accessibility for foreign visitors, the same as creating an AR experience tailored to individuals with learning difficulties, or disabilities, such as poor eyesight or hearing.

Stakeholders predict AR would bring Geevor back to life, providing contrast between the past and present to enhance the visitor experience. B6 claimed it would be useful in "bringing to life an industry that effectively doesn't work anymore, but making it work in the eyes of visitors". On a similar note, stakeholders recognised the ability to tailor information to different knowledge levels, interests, target groups and ages using AR, to improve the visitor experience and avoid information overload. It was suggested this would be beneficial to engage and attract younger audience groups, and G5 added it would "make the whole thing fun as well as being factually educational", a benefit of AR also recognised in literature (Palumbo et al., 2013). From an educational perspective, T1 and T2 felt AR would improve visitors social learning experiences, particularly for children who remember information best from kinaesthetic experiences. T3 added that it would enable visitors to own their learning, and B3 and T1 felt it would create a more impactful learning environment by making information more digestible.

4.2 Value of AR for Stakeholders

In terms of the value of AR for stakeholders, it was suggested AR would help preserve the knowledge of the existing staff for the enjoyment, education and entertainment of future generations. For instance, G5 commented "as the place evolves, our older members of staff who have knowledge of the place will not be here, so it can preserve that knowledge". In this way, G8 added, "AR is the perfect substitute for people". From an internal perspective, it was acknowledged AR could

help improve the efficiency and effectiveness for staff explaining complex process and descriptions, whilst ensuring visitor engagement and increasing understanding. G4 added that AR would save time and make the job of the guides easier.

Stakeholders recognised many financial benefits of introducing AR; increasing visitors spending and retention (B1, B4), adding value to the visitors experience (B3, B4, B6, G6, G9), appealing to a wider audience (G3, G5, G7, G9), increasing visitor numbers (G1, G3), improving revenues (G2, B4), improving job security (G2) and bringing Geevor into the 21st century (G9) and improving marketing (G6, G9, B4). L2 identified that one of Geevor's main challenges is lack of funding, but acknowledged by introducing AR and increasing Geevor's profile, it would demonstrate commitment to improvement and site advancement to attract more funding from local stakeholders. Likewise, B3 supported that it would increase Geevor's credibility, commenting that it would show "the organisation is committed to innovation, research and development".

Further, by increasing the marketing potential and visibility of the site, stakeholders suggested it would create a perception change about Geevor, raising the profile of the site and Cornwall as a tourist destination, thus attracting more visitors. For example, T2 commented that AR is the "kind of thing Cornwall needs more of" suggesting it is the sort of experience visitors expect at big urban attractions, not small rural locations such as Geevor. Literature also identified the value of using AR to increase visitors numbers (Palumbo et al., 2013) and marketing success (Tscheu & Buhalis, 2016; Jung et al., 2015). The more visitors Geevor attracts, G2 identified "the more money we have on site, the more secure their jobs are". Additionally, internal stakeholders, recommended by enhancing the visitor experience it would create a behavioural change, increasing visitors' appreciation towards the protection and conservation of cultural heritage, hence helping ensure Geevor's long-term viability (G3, G6).

5 Conclusions

Overall, this exploratory study identifies the ways in which AR can create value for both visitors and stakeholders. Exploring AR implementation from a BM perspective bridges a gap between the potential of AR and actual value-adding benefits, demonstrating some of the ways AR can create and capture value in terms of the VP. Although, because AR technology is still evolving, it's full potential and value remain to be seen. Even so, this study extends knowledge, advancing one-step forward toward the meaningful implementation of AR in cultural heritage tourism. Although it is recommended future studies are extended to include other BM elements, such as architecture, network and finance. Nevertheless, this study identifies the current potential of AR to create values, such as preserving knowledge and increasing accessibility, benefits which have not been previously identified in research. Therefore, this adds to and extends the existing pool of knowledge and understanding of AR, whilst also confirming findings from previous research, for example using AR as a tool to create more memorable tourist experiences (Yovcheva et al., 2013) or improving marketing presence and competitiveness (Tscheu & Buhalis, 2016; Jung et al., 2015). Implementing AR is a necessity for tourist attractions to remain competitive and secure their viability for the future. However, it is recommended that research focuses on developing an AR BM prior to implementation, since it is argued,

"a better business model will beat a better idea or technology" (Chesbrough, 2007, p.12).

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