Introduction

Developments in information and communication technologies (ICTs) have transformed communication across the world (Poushter 2016). ICT can include hardware, software, network (networked operating systems) and humanware (hardware or software built around the users’ needs) used to facilitate communication across time and space (Buhalis 2003). Increasingly, festivals are integrating new ICTs into the attendee experience (Van Winkle & Comer 2011), and technology can mediate festival experiences or become the experience itself and transform the festivalscape (Neuhofer, Buhalis, & Ladkin 2014; Robertson, Yeoman, Smith, & McMahon-Beattie 2015).

While ICT has been the subject of user experience research in tourism and recreation contexts (Höpken, Gretzel, & Law 2009; Kim & Schliesser 2007; Law, Leung, & Buhalis 2009; MacKay & Vogt 2012), ICT use has received less attention in festival studies. Themed public celebrations (i.e. festivals) have been an important part of life throughout history, and events have become increasingly important because of the flexible programming offered in a time when people feel the pressure of limited time available for leisure (Getz 2012). With increased competition for attendees, festivals often try to reinvent themselves by diversifying their programming. While ICT has been commonly used at festivals for utilitarian purposes like on-line ticket sales, recently some festivals have begun to provide patrons with opportunities to interact with the event and other patrons through ICT. For example, beginning in 2016, Coachella live-streamed festival events in 360 degrees. A wide range of ICTs can be included in the festival experience. The majority of people across the globe now own a mobile device (MD) (Mobile Fact Sheet 2017), and because of the increasing popularity of mobile technologies, many festivals are finding ways to include digital mobile elements at the festival.

This chapter will examine the current state and future implications of ICT integration into festival experiences and will focus on ICTs used by attendees in festival settings; specifically, the Internet, MDs and social media use will be explored.
Background

The evolution of ICT, including the computer, Internet and World Wide Web (WWW), has transformed society over the course of the 20th and 21st centuries (Leiner, Cerf, Clark, Kahn, Kleinrock, Lynch, Postel, Roberts, & Wolff 2009). The computer revolution began in the 1960s and continued throughout the next three decades with the development of minicomputers, modems, networks, user interfaces, less-expensive personal computers and eventually mobile digital technology (Leiner et al. 2009; Lonnquist 2011; Peter 2007). In the 1990s, complex computer networks within companies were common, but personal online networks did not yet exist limiting the scope of these networks. The development and growth of the WWW in the late 1980s and early 1990s provided people with the opportunity to share, link and connect various operating systems across organizations, communities and the globe (Lonnquist 2011).

At the turn of the new millennium, the WWW transformed again and its influence on our lives grew (Tapscott 2009). This transition to the WWW 2.0 came about when the WWW became a place where people could contribute by producing user-generated content (UGC). As of 2017, half of the world’s population had access to the Internet (We Are Social 2017).

Online communication with other users began in the 1960s and 1970s with the introduction of email and evolved to include listservs in the 1880s, chat rooms in the 1990s and paved the way for online social networking sites, which were first introduced in the mid-1990s (McIntyre 2014). By the 21st century, communicating online was commonplace, and so when sites like Myspace and Facebook were introduced in the mid-2000s, millions of consumers joined these platforms within the first few years of their introduction.

MDs evolved along a similar timeline and have also drastically transformed the way we communicate and access information. The first mobile wireless phone was introduced in the 1970s. Within 20 years, mobile digital technology has advanced incredibly, and mobile phones are used by over two-thirds of the population across the globe (We Are Social 2017). MDs may be ‘the most rapidly diffused technological artifact in history’ (Wajcman 2008, p. 68).

As consumers use the WWW, social media and MDs to communicate, (including festivals) look for opportunities to engage with customers using these tools (Neuhofer, Buhalis, & Ladkin 2015). Research indicates that value can be added to a consumer experience when ICT is integrated in such a way that individuals can ‘gather information, enrich and construct experiences’ (Neuhofer et al. 2015, p. 791).

Types of MD use

The Typology of Human Capability (THC) (Korn & Pine 2011) presents experience-enhancing digital opportunities. The THC assumes that digital technology gives people the opportunity for connecting and doing individually or as a group. Classifying technology use according to these dimensions results in the following digital experiences for users: sensing, performing, linking and organizing. Sensing describes how people’s sensations can be enhanced through digital technologies. ICT can also facilitate performing by offering tools that enable people to accomplish something. Linking facilitates connection and interaction with others. Organizing enables groups of individuals to form and function. The four constructs can work independently, as well as collectively to enhance a person-centred experience (Korn & Pine 2011).

Van Winkle, Cairns, MacKay and Halpenny (2016) examined the THC in festival contexts and after completing 163 interviews with attendees at six different festivals, found that linking
was the most common digital experience had by festival attendees, but that all experiences described by the THC were seen at festivals. Based on the interviews undertaken, operational definitions of the THC constructs were developed for the festival context. At the festival, linking using ICT involved connecting with others. Connecting occurred through speech, text or visuals and was either virtual or in-person, immediate or delayed (e.g. posting social media content). Organizing involved the use of ICT to coordinate a group of individuals at, or to, a festival. This could require immediate action and initiative by one or all of the group members (e.g. using mobile to arrange meeting up with others). Sensing provided festival attendees the opportunity to experience different sensations. These sensations could be psychological, emotional or physical. Within the physical realm, MDs offered opportunities to see, hear or feel the festival differently through digital imagery, recordings or haptic (touch) technology enabling people to experience information in a new way. Performing involved independent action, such as when an individual engages with mobile technology to accomplish something that influences their experience (e.g. purchasing tickets and locating directions).

Van Winkle et al. (2016) adapted the original version of the THC to recognize the important role that context plays in how technology affects festival experiences. The addition of context acknowledges that ICT used during a festival may or may not be used in relation to the festival and that this likely affects attendees’ overall experience attending the festival. What the THC conceptualization does not offer is insight into the outcomes of ICT use and how using technology to link, sense, organize and perform may detract from or enhance a festival experience. Future research should examine the outcomes of technology use during festivals. In particular, insights into the effects on attendees’ experiences in terms of engagement and satisfaction will provide needed insight for festival administrators.

Acceptance and use of ICT in festival contexts

Theories describing user acceptance of technology provide a comprehensive understanding of the factors affecting ICT adoption in festival settings relevant to both current and future technologies. By grounding the discussion in theory, the specific technologies described become less important than considering the implications of all ICT on the visitor’s experience.

The Diffusion of Innovation Theory (DIT) was an early technology acceptance theory that explored how technology is adopted over time. This framework describes the stages people and organizations go through in deciding whether or not to adopt a new technology (Rogers 1995). DIT has been criticized because while it describes adoption, it does not explain how adoption occurs or factors that lead to adoption and this limits its scope of application (Straub 2009). Two widely accepted theories exist that describe IT adoption specifically – Technology Acceptance Model (TAM) and the United Theory of Acceptance and Use of Technology (UTAUT) (Straub 2009). TAM posits that perceived ease of use and perceived usefulness affect intention to adopt and use a technology and the adoption of a new technology (Davis 1989). This model has been criticized because it does not recognize differences between users. The UTAUT evolved out of the TAM and suggests that performance expectancy, effort expectancy and social influence predict behavioural intention to use IT and, in turn, predict usage. In this model, gender, age and experience are all moderating factors for intention to use technology (Venkatesh & Davis 2000), addressing issues with the TAM. Further modification has resulted in the UTAUT2 (Venkatesh, Thong, & Xu 2012), which adds habit, hedonic motivation, price value and facilitating conditions as variable affecting intention to use one’s device.

Van Winkle, Bueddefeld, MacKay and Halpenny (2017) examined the UTAUT2 variables in three festival settings and demonstrated performance expectancy, habit and hedonic motivation
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affect intention to use MDs at festivals. Attendees use devices because they feel they add value to their experience. The range of functions offered by mobile make it a useful tool in an intense context, and users feel that MDs facilitate their ability to perform tasks they need to undertake.

Habits, measured by people’s perception that they have developed a habit of using their MD, affected their intention to use their device in the festival context (Van Winkle, Cairns, Halpenny, & MacKay 2016). With the range of functions offered by devices, many have become accustomed to using MDs on an ongoing basis. Festival visitors may be using their MDs, checking the Internet, and posting on social media due to habits formed outside of the festival context. This can be both a benefit and drawback in the festival setting. Attendees with well-formed habits will find that using mobile to coordinate activities may facilitate the festival experience. When festivals introduce novel programming using ICT, attendees with a strong habit of using mobile will likely easily adopt these new offerings. Alternatively, this habit may, at times, interfere with experiencing the festival. It seems likely that when the habit of using a device triggers festival-related MD use, then the experience will be enhanced, whereas when the habit triggers non-festival-related use, the festival experience will suffer. Further research is needed in this area to understand the implications of our MD use habits on our festival experiences.

Motivations for attending festivals have been well researched and highlight the hedonic and social value people derive from festivals (Crompton & McKay 1997; Lee, Lee, & Wicks 2004). Given the pleasure-seeking aspect of festival experiences, it is no surprise that when people use mobile in festival settings, they do so because of the hedonic elements of mobile use (Van Winkle et al. 2017). When examining how festivals are engaging audiences through ICT, the vast majority of experiences are utilitarian (ticket purchasing, schedules, maps). There is great opportunity for festivals to entice audiences with ICT programming that has hedonic elements such as fun, pleasure and entertainment.

ICT nonuse is less understood than acceptance and use (Selwyn 2003). Disconnecting from technology is becoming increasingly prevalent in leisure and tourism settings, and considering nonusers is essential to understanding the role of ICT during festival experiences (Dickinson, Hibbert, & Filimonau 2016; Pearce & Gretzel 2012). Early research on ICT non-adoption focused on the digital divide and disparate access to technology, with little recognition that there are people who choose to reject technology (Selwyn 2003). Not all festival participants are enthusiastic about integrating ICT into their festival experience. Research has found that 10–15% per cent of attendees either don’t own or don’t have an MD at the festival (Van Winkle, Cairns, Halpenny, & MacKay 2014). Of those that do have a device, as many as 10–20% per cent don’t intend to use their device during the festival (Van Winkle et al. 2014).

Reasons for nonuse vary and include disappointed nonusers who had an unusable device, indifferent nonusers who didn’t bring an MD with them and enthusiastic nonusers who felt that the presence of an MD was an unwanted interference or inappropriate for the context. There are times when nonuse is freely chosen and other times when it is imposed (Van Winkle et al. 2014). In each case, there is potential for the lack of a MD to affect the festival experience, either positively or negatively.

All festivals need to consider their audiences and the role mobile technology should play in the festival experience. Some festivals may attract audience members more likely to reject technology and who are seeking an escape from being connected. By having a disconnected festival, some festivals may be able to uniquely appeal to this niche market. Alternatively, providing novel mobile experiences may attract new audiences and distinguish a festival from its competitors. When deciding how to integrate ICT into the festival experience, festival administrators should consider the mandate of the festival, resources available, and both technology users and nonusers.
ICT and the attendee experience

The attendee experience is paramount in a festival context. Festivals hold a range of meanings for people, and creating memorable experiences for attendees is an important consideration for festival administrators (Crespi-Vallbona & Richards 2007; Getz 2012). With the growth of the event industry (Getz & Page 2016), competition for festival funding and audience members continues to increase (Dean 2016). Festival organizations look for novel ways to provide unique experiences that appeal to diverse audiences. ICT offers the opportunity for innovative interaction and co-creation experiences, and can provide new or enhanced elements to a festival (Neuhofer et al. 2015; Tussyadiah & Fesenmaier 2008).

Neuhofer et al. (2014) presented the ‘Experience Typology Matrix’ to classify technology-enhanced experiences along two dimensions: intensity of co-creation and intensity of technology. Co-creation occurs when the customer is part of creating the experience and the consumer and company create value together (Prahalad & Ramaswamy 2004). This typology demonstrates how organizations can enhance experiences with technology by engaging consumers in co-creation and technology use. The typology results in a hierarchy of experiences that include (1) conventional experience, (2) technology-assisted experience, (3) technology-enhanced experience and (4) technology-empowered experience. This hierarchy suggests that the ultimate experience will have intense technology integration and intense co-creation elements that result in immersive, interactive and pervasive experiences. Even technology-assisted experiences may offer visitors new opportunities, including the ability to micro-coordinate during the festival experience (Wajcman 2008), allowing participants to make plans throughout their festival experience and connect with others regardless of time or location. While this typology provides needed insight into how attendees can be engaged through technology and co-creation, it does not acknowledge negative implications of technology integration on experience.

Festivals have often been described as liminoid spaces (Sharpe 2008; Turner 1974). The concept, first introduced by Turner (1974), presents the liminal or liminoid as a place to escape, away from everyday life. Within the liminoid space of festivals, people may find refuge from the routine and structure of daily life and discover a more flexible social place in which to lose oneself, if only temporarily (Picard & Robinson 2006). Communitas describes the unstructured community formed in festival settings and depicts the common experience shared by attendees (Turner 1974). The temporary state of togetherness formed by festivals is a unique feature of this leisure/tourism experience that has been discussed across festival genres (Laing & Mair 2015). Mobile connectivity may impact the liminality and communitas experienced at the festival. The anytime/anywhere connectivity offered by mobile technology (Green 2002) may facilitate attendees’ connection to the festival and other attendees but may also make it difficult to lose oneself in the novel space of a festival. While at a festival, we are able to fill dead space/time with communication (Wajcman 2008). Unfortunately, this constant connection can reduce the spontaneity that makes a festival experience unique, and ICT may become a ‘leash’ that keeps us tethered to our everyday lives reducing opportunities for serendipity and discovery (Luxford & Dickinson 2015; Prasopoulou, Pouloudi, & Panteli 2006). Ballantyne, Ballantyne and Packer (2014) described four aspects of a music festival experience: music, festival, social and separation. ICT affects our experience across all of these realms, and while mobile engagement seems capable of enhancing our connection to performance, the festival and social groups, it simultaneously prevents us from separating from our everyday lives, thereby reducing our disconnection while at the festival.
ICT plays a role in the festival experience through all stages from pre-festival anticipation and planning through the return home and reflection (Berridge 2007; Clawson & Knetsch 1966; MacKay, Barbe, Van Winkle, & Halpenny 2017). While much attention is given to technology pre- and during the festival, there are opportunities for festivals to engage attendees using ICT post-festival that should not be overlooked. The unbounded time/space offered by ICT can be used to engage audiences on an ongoing basis and build lasting connections both between the festival and attendees and amongst attendees. MacKay et al. (2017) found that festival social networking sites were predominantly active during the festival with two-thirds of tweets posted during this timeframe. A third of tweets took place the week before a festival with little to no activity post-festival. This is a lost opportunity offered by ICT to enhance the value of the festival for consumers.

Festival administrators and attendees must not become complacent about how ICT is integrated into their festival experience. Administrators should carefully consider how new ICT ventures can be used to enhance experience and add value for the festival attendee. At the same time, festival attendees should avoid letting habits formed in daily life dictate how their mobile use affects their limited time at the festival.

Trends

The integration of emerging technologies into the festival context allows festivals to offer novel experiences and add value for attendees, when integrated appropriately. In recent years, technologies like augmented reality (AR), virtual reality (VR), haptic and wearable technology, gamification and location-based ICT have been explored at some festivals and will likely emerge at festivals globally in the coming years as they become increasingly accessible (Robertson et al. 2015).

There are many possible AR and VR applications in leisure and tourism. VR technology allows users to access a 3D virtual environment that can be explored and interacted with, engaging one or more of the users’ senses (Guttentag 2010). Products like Google Cardboard, which use consumers’ MDs to display the environment, have made VR accessible to the masses. High-end products like Rift provide users with high-quality virtual experiences not previously accessible to consumers. At festivals, we have recently seen VR introduced as a way to experience the festival from far away locations giving people who can’t attend the opportunity to be part of the experience and allowing attendees access to backstage areas. VR allows people to experience space and time anywhere, anytime. Providing access to spaces that are off-limits, offering additional content and enticing new attendees with a sense of the festival in advance of attendance are all possible with VR technology and have implications for festival marketing, experience design, education, accessibility, preparation and evaluation. AR offers similar possibilities as VR and involves superimposing computer-generated content onto reality. For example Cinemental, a Canadian Francophone film festival, used AR to enable the public to bring the festival’s promotional posters to life and shared the history of the festival (Blair 2017). These types of opportunities are known to provide immersive experiences that enhance psychological presence (Gutierrez, Vexo, & Thalmann 2008).

Haptic technology engages the sense of touch and provides users with real-time tactile feedback (Hall 2014). Most smartphones already offer some haptic elements (e.g. vibration). Features such as these integrated into festival apps could easily enhance attendees’ experiences. Digital maps that use haptics to guide visitors could be used by people with visual impairments or by all attendees in a dark festival space. The Apple Watch is likely the best-known haptic wearable
technology, but haptic clothing has been developed, and one can imagine a future where wearing a haptic shirt that pulses with the music enhances a festival experience (Scott 2010).

Gamification involves adding game-like elements (points, levels, competition, rules) to non-game activities. By adding these elements, it is believed that people will become more engaged in the activity as a result of the clear goals and incentives provided in a rule-bound context (Rashid 2017). The Sydney Festival evolved their mobile app to add elements of gamification to enhance the app user experience (Sydney Festival 2012). The app involved real-time challenges that helped people to personalize and share their festival experience.

Location-based experiences are becoming somewhat common with smartphone technology. Many mobile users use push notifications offered by mobile apps. Products like iBeacon take location-based experiences further by integrating time and spatial recognition to deliver messages to mobile users within a certain distance of iBeacon. The Bonnaroo Festival provided proximity-based notifications to app users. With technologies like iBeacon, festival attendees can benefit from information about up-to-date program changes, crowded locations and emergency situations (Kahn 2014).

Many of these emerging technologies will provide opportunities to develop experience-enhancing ICT at festivals, moving beyond utilitarian applications. As festivals adopt and integrate new technology into the attendee experience, we all must consider the implications. Existing theories and research provide insight into the drawbacks and benefits that, if considered, can assist festivals and attendees making choices about new technology use that will enhance experiences and will not detract from the festival.

Conclusion

To date, the research examining ICT integration into the festival experience has contributed to the development, evolution and refinement of theories about both the role of ICT in our lives and our experiences at festivals. Better integration of theories (e.g. TAM, UTAUT), frameworks (e.g. THC, Experience Typology Matrix) and concepts (e.g. habit, liminality, communitas) currently informing our understanding will enhance the contribution research makes to practice. Moving forward, transdisciplinary approaches in this field of study would enable the research to move beyond traditional disciplinary boundaries (management, marketing, geography, leisure, tourism, psychology, sociology) and provide complex insights relevant in a range of fields of study.

In the future, researchers and practitioners should continue to explore ICT users’ and nonusers’ behavior as well as the costs and benefits of ICT use at festivals. Much of the existing research examines particular groups, concepts and outcomes in isolation. By considering these varying perspectives simultaneously, more meaningful insights will be possible.

References


