Examining Virtual Reality (VR) Usage in Sport

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The realm of sport and technology may be preparing for a new paradigm shift. Virtual reality (VR), a fabled technology, is slowly working its way into professional sport organizations (Baker, 2015), player development/training (Pelissero, 2014; Swartz & Blumenthal, 2015), and college athletics recruiting (Associated Press, 2015). VR is also being used as part of the experiential marketing tactics (Adams, 2017). VR is a technology that creates a three-dimensional environment, allowing users to experience a computer-generated landscape through his or her own sensory perception, physical movement, and text or speech (Burdea & Coffit, 2003). Today, VR devices such as the HTC Vive and Oculus Rift allow users to attach their goggles and other peripherals to a computer or a game console or use their smartphone to connect with a specially designed goggles provided by the manufacturer. Although VR has existed as a technology for some time, recent technological advancements have allowed for the creation of a more dynamic environment capable of increasingly complex and realistic functions. The improved technology is creating an emerging market where opportunities exist within the various elite sport and sport consumer industries.

Other disciplines such as the video game industry, the medical community, armed services and higher education have utilized VR in various capacities (Ludlow, 2015; Sherr, 2015). For example, news journalists and documentary filmmakers have used the realistic nature of virtual reality to provide a more immersive broadcast, thus creating a more empathetic message for viewers (Manley, 2015). Several topics that incorporated VR to create a more effective message were food insecurity in Los Angeles and the global refugee crisis (Manley, 2015). However, this technology seems especially applicable to sport (a) from an elite sport perspective, as initial adopters have employed VR systems to assist athletes in training regimens by simulating game scenarios (Pramuk, 2015; Schnell, 2015) and, (b) from a sport consumption standpoint, as media networks have either already broadcast professional sport league games in VR or are planning to do so in the near future (Baig, 2017; Golden, 2015; Leung, 2017; Von Thron, 2015; Yasinski, 2015). Mainstream media such as Comcast and Time Warner, possibly sensing a shift in consumer habits away from cable, have also invested in VR (Nicas, 2015). The New York Times, a bellwether publication in the news media industry also embraced VR, announcing in Fall 2015 that it partnered with Google on a virtual reality project (Somaiya, 2015). While results of early VR usage in sport are mixed (Fox, 2015; Wolverton, 2015), many early adopters of VR have set the stage for its pervasive use in sport and for the possible adoption by other members of the public.

Although the use of virtual reality in some disciplines has increased within the last 10 years, (Falconer, 2013), the sport industry and sport management community seem to be in the early stages of technology adoption. From a sport management research standpoint, a gap in the literature exists as few articles explore VR in the sport industry. Although some sport-related VR scholarship exists, it mostly explores VR's use in the injury rehabilitation field or and some elements of sport training (Levin, Weiss, & Keshner, 2015; Vignais, Bideau, Craig, Brault, Multon, Delamarche, & Kulpa, 2009). Therefore, the purpose of this study was to examine sport consumers' overall experience in using VR devices to connect with sport.

Considering the early adoption stage of VR in sport, the data were collected from 17 participants using the ethnographic semi-structured in-depth semi-interviews (N = 17). When exploring new technology, which is exploratory in nature, qualitative approach is considered appropriate to provide depth of understanding (Creswell, 2013). The participants were selected through a purposeful sampling process to identify sport consumers who are current VR users. The participants included 16 males and one female, ranging in age from 18 to 35. The researchers analyzed the data using grounded theory coding (Charmaz, 2010). Grounded theory design is appropriate when researchers wish to develop or modify a theory, explain a process, or develop an abstraction of the interaction and action of people (Creswell, 2011). Three researchers independently open coded the data by identifying patterns and
themes that emerged as suggested by Strauss and Corbin (1990). The researchers also analyzed the data by conducting line-by-line coding to remain open to the data (Charmaz, 2010). The researchers tried to remain neutral throughout the coding process to eliminate any research bias associated with previous studies or the researchers' subjectivity. After the open coding process, data were axial coded to sort and reassemble the data into eight major themes. The themes identified were community, social, escape/entertainment, life style, early adoption, technology, economics, and physical. Axial coding follows the development of a category to “give coherence to the emerging analysis” (Charmaz, 2010, p. 60). Once key findings were identified, the researchers crossed-checked the conceptual memos, transcribed interviews, and line-by-line coding to ensure proper interpretation of the data.

The majority of participants indicated that their initial entry to sport experience was through gaming or by their interaction within the VR community. Although VR apps exist for watching a game or news highlights, a majority of the participants were engaged in participatory sports rather than spectating sports. Users’ participated in sport games also involved them forming communities related to various VR games such as dodgeball, tennis, and table tennis. This allowed VR users to select their team and partners. The community, including those who watched, and played sport, also allowed the participants to escape from reality to a virtual world provided hours of entertainment regardless of time and place. When explaining their sport related experience, participants often referred to VR world as “cool”, “fun”, “entertaining”, and “cutting edge”. In our conversation, we noted that VR users felt that owning a VR device was a privilege, allowing users to be a part of something special, which are common behaviors of early adopters. The participants also discussed integrating VR into their lifestyle. In considering that majority of their VR usage time was spent on participatory sport, many indicated that they had to alter their living space to accommodate their movement. One participant indicated that he moved to an apartment with vaulted ceiling with greater wall space so that he could safely move around while playing dodgeball on his HTC Vive VR device. On the other hand, the users experienced limitations as they were attached to the cords while wearing goggles. Participants also indicated that they experienced dizziness or fatigued when using the VR for an extended period of time. In addition, wearing goggles while being attached to the cord also posed a limitation as part of their VR experience. Participant also spent an average of $35 when purchasing an app and were only willing to do so after reading reviews from other VR users in the community that informed their decision to buy the app.

Based on the eight findings that emerged from this study, they suggest that early VR adopters are mostly interested in actively participating in the VR world rather than spectating. Unlike wearable devices where user interaction with the device was important, VR devices allowed users to escape to a different world where user involvement was critical. Sport spectating, however, is slowly becoming a rising trend as VR experiences offer multi-aspects of the games (e.g. different angles, behind the scene views) that are not normally available on a television. This study provides the foundation for future research that will continue to explore VR usage related to sport and adoption trends.