

There's an App for That

The Development of an NFL Team Mobile Application

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Abstract

Technological advances, such as mobile applications (apps) are enhancing the way many sport fans interact with their favorite teams. Many sport organizations have started to utilize mobile apps in an effort enhance fans' experience at the stadium and abroad. The current case study examines the adoption of a mobile app by a NFL team. The adoption of innovation framework provided by Hoerber and Hoerber (2012) was used to guide seven interviews with key decision-makers within the NFL team, with findings overlaid on the three stages and three determinants of innovation adoption. Findings revealed the team's need to interact with fans and enhance the game day experience were primary environmental determinants for the adoption of this innovation. Furthermore, the shift in leadership's attitude toward innovation was a significant managerial determinant. The qualitative results provide a rich description of the innovative process.

Keywords: *NFL; mobile app; adoption of innovation; qualitative*

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Introduction

Whether watching a game at home or in the stadium, technological advances continue to provide ways for sport fans to stay engaged longer and more frequently with their favorite sport entities. From checking scores, planning their next fantasy move, or interacting with an athlete on Twitter, fans have more access to sport than ever before (Morrison, 2011). Why then is attendance at some of the world's most popular sports leagues (e.g., National Football League) declining (Florio, 2012)? Some commentators have pointed to recent advances in the in-home viewing experience as the possible culprit. For instance, staying home provides multiple games and camera angles, close-ups, replays, no lines for the bathroom, and it is far less costly than attending a live sporting event (Rovell, 2012). Sport organizations are thus left with the challenge of luring fans out of the comforts of their living rooms. The creation of an interactive mobile application (app) for in-stadium use has been one solution sought by sport organizations.

With 125.9 million people in the U.S. owning smartphones as of December 2012 (comScore, 2013) and approximately 74 million tablet users (Koetsier, 2012), it is no surprise the general mobile app market has seen a significant boom. In recent years, the global mobile market has developed mobile apps at an incredibly fast rate (Ho & Syu, 2010). These apps are downloaded by the user or preinstalled on their mobile phone or tablet prior to purchase. Nearly 50 billion mobile apps were downloaded in 2012, and more than 73 billion mobile apps will be downloaded in 2013 (Samson, 2012). That equates to about 2,300 app downloads per second. While this boom has been felt within a variety of industries, it could be argued that the sport industry has been at the epicenter of this growth. A search for the word *sport* within the Google Play Store yielded 42,631 apps as of February 2013.

Nearly every avenue of the sport industry has been impacted by the surge in mobile app usage. From youth soccer to golf course management to professional sport spectatorship, mobile apps are enhancing the experience of a variety of stakeholders within the sport industry. Several questions exist, however, for sport organizations and practitioners looking to harness the mobile app market. For instance, what stakeholders should be targeted? What value or benefit will this technology bring? What organizational units should be involved in the creation process? What infrastructure needs to be in place to fully support the technology?

Within the lexicon of sport management literature, there exists a surplus of research surrounding the influence and implications of certain technologies used to enhance the sport fan experience, most notably Twitter, Facebook, and fantasy sports (cf., Dwyer, 2011; Hambrick, Simmons, Greenhalgh, & Greenwell, 2010; Mahan, 2011; Wallace, Wilson, & Miloch, 2011). However, there is a significant gap in the literature with respect to mobile apps. As a result, guided by Hoerber and Hoerber's (2012) organizational innovation framework, the current study investigated the adoption of a mobile app within a major professional sport organization

across the initiation, adoption decision, and implementation phases, and analyzed the managerial, organizational, and environmental determinants which lead to the organization's adoption of the mobile app innovation.

Conceptual Framework

Organizational Innovation

Innovation is widely viewed as a source of competitive advantage and an organization's capacity to incorporate innovation is one of the most important determinants of an organization's performance (Crossan & Apaydin, 2010). In both academic and practitioner communities, it is commonly perceived that organizations should "innovate to be effective, or even to survive, and that research can guide the management of innovation in organizations" (Damanpour & Schneider, 2006, p. 215). The current study adopted the commonly cited definition of innovation by Zaltman, Duncan, and Holbek (1973) where innovation is "any idea, practice, or material artifact perceived as new by the relevant unit of adoption" (p. 10). Within the current study, the unit of adoption is a NFL team and the innovation is a mobile app. Adoption of innovations is intended to improve or maintain an organization's level of performance or effectiveness (Damanpour & Schneider, 2006). From an organizational context, researchers are interested in understanding the process and determinants which lead to the adoption of innovations (Hoerber & Hoerber, 2012).

As noted by Caza (2000), most research on organizational innovations simply describe the change which occurred and the surrounding environmental conditions. These studies provide a very clear picture as to *what* happened, but fail to adequately describe *how* the change happened. The current study utilized the framework set forth by Hoerber and Hoerber (2012), an adaptation of Damanpour and Schneider's (2006) model, addressing the intersection of managerial, organizational, and environmental determinants which led to innovation across the three distinct stages of innovation adoption: initiation stage, adoption decision stage, and implementation stage (see Figure 1).

Process of Innovation

Organizational innovation has been determined to go through a multifaceted process. Damanpour and Schneider (2006) as well as Hoerber and Hoerber (2012) articulately described the three stages of organizational innovation. The first stage, *initiation*, consists of the organization identifying the need for innovation and researching potential solutions for adoption. *Adoption decision* is the second stage and is marked by the evaluation and selection of proposed solutions and the allocation of resources by organizational leaders towards the innovative project. The final stage is the *implementation stage*, which takes place after the decision to adopt the innovation and includes modifying the innovation as well as promoting its use by key stakeholders.

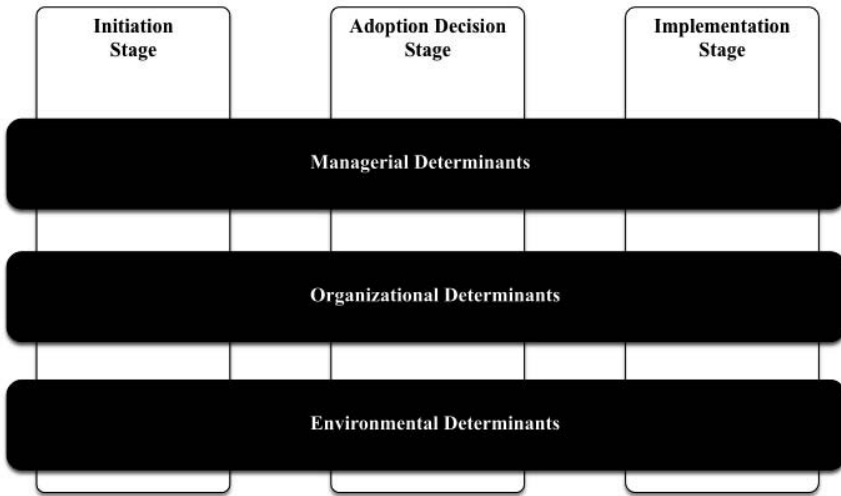


Figure 1. Determinants and Process of Organizational Innovation. Reprinted with permission from L. Hoerber and O. Hoerber, 2012, “Determinants of an innovation process: A case study of technological innovation in a community sport organization,” *Journal of Sport Management* 26(3), 213–233.

Determinants of Innovation

Similar to the process of innovation, there are also three determinants of innovation: managerial, organizational, and environmental (Hoerber & Hoerber, 2012). Innovation can be a response to environmental factors within the industry in which an organization operates, or a response to consumer wants/needs (Damanpour & Schneider, 2006). Organizational determinants of innovations include the degree to which the organization is in touch with the external environment, the economic health of the organization (Berry, 1994; Damanpour & Schneider, 2006), as well as the organizational culture with respect to risk taking, openness to change, and forward thinking (Igira, 2008; Smith & Shilbury, 2004; Wolfe, Wright, & Smart, 2006). Finally, managerial determinants that can impact innovation include: top management’s view of innovation as they often foster organizational culture and control the requisite resources to initiate, adopt, and implement innovation (Crossan & Apaydin, 2010). Also, age, gender, education, tenure (Damanpour & Schneider, 2006), and attitude toward innovation by upper management (Jaskyte, 2004) have been found to have a significant impact on organizational innovation.

This framework has been extended to several fields. For instance, in his assessment of English local governments adoption of innovation, Walker (2007) found that different types of organizational and environmental factors impact the

adoption of innovation within a firm. Jaskyte (2004) also found that organizational culture and management/leadership had a significant impact on adoption of innovation within non-profit human service organizations. Lastly, Hoeber and Hoeber (2012) utilized this conceptual framework for their analysis of an innovation adoption by a Canadian community sport organization. Specifically, Hoeber and Hoeber's (2012) investigation reviewed both the determinants and phases of the adoption of electronic game sheets by the sport organization. Each of the determinants and phases of innovation adoption will be further discussed within the Findings section.

Method

The current study examined the experience of NFL administrators in initiating, adopting, and implementing a mobile app within the setting of one NFL organization. The context of the study was a single case or "bounded unit" of measurement in that we examined the procedures and actions of one professional sport team as it related to the development of their mobile app. Thus, this study was a case study. Both Yin (1989) and Stake (1995) encouraged the use of case studies for exploratory and descriptive qualitative assessments of unique circumstances and/or hard to reach populations. With regard to the current study, there are only 120 or so professional sport organizations in North America at the same level of the team under examination (Major League Baseball, National Basketball Association, & National Hockey League) and only 32 NFL teams. In addition, NFL teams are traditionally very guarded in the information they provide to outsiders. Thus, this setting was distinct in relation to both uniqueness and access.

Participants

Given the setting was within one organization, the current study utilized purposeful sampling. Seven professional administrators with unique knowledge and unmatched access to the project were selected to participate in the study. Each participant was directly involved in the initiation, adoption, and/or implementation process of the mobile app. Included in the study were a Sales Manager, a Social Media Manager, a Director of Broadcasting, a Sports Marketing Sales Executive, an Account Manager for Sponsorship Sales and Services, a Broadcast Maintenance Engineer, and the Safety and Security Coordinator. See Table 1 for a complete list of participants' title abbreviations.

To protect the anonymity of the participants, no further descriptive information will be provided. After analysis of the seventh interview, it was determined that saturation had been reached with regard to unique knowledge (e.g., based on repetition of a majority of the codes); therefore, no further participants were solicited. In particular, as the thematic analysis of the interview transcripts progressed, it became apparent that no new information about the participants' experiences was emerging (Guest, Bunce, & Johnson, 2006).

Understanding this sample could be perceived as small, it is important to note this was a case study of one NFL team. In addition, the front office staff of a professional sport team is not large. In fact, according to team personnel, the front office and organizational staff total just around 125 individuals. As it relates to the mobile app project, the same individual estimated that 10–12 individuals had *any* direct interaction with the project. Thus, this sample represents 58% to 70% of the useable participants. This sample included individuals who were intimately involved in the entire mobile app adoption process as well as individuals more removed from the project. For example, the DOB was instrumental throughout all phases of the process while the SM was only involved in the initial planning phases. This variety of individuals was selected in an effort to provide a more holistic perspective of how the project was implemented as well as its effects on the organization as a whole. Table 1 also reports each interviewee's level of involvement throughout the project.

Data Collection and Procedure

In-depth, semi-structured interviews and focus groups were used as this exploration's data sources. According to Seidman (1998), "interviewing provides access to the context of people's behavior and thereby provides a way for researchers to understand the meaning of the behavior" (p. 4). In this case, interviewing was used to understand an individual's or a group's experience with the organization's mobile app project. Data collection occurred over the course of eight weeks during the organization's soft launch of the app. According to one participant, the app had been downloaded over 66,000 times before the interviews took place. Each participant was interviewed by two investigators using a semi-structured interview protocol. This guide was utilized to provide structure to the interviews. A copy of the interview protocol can be found in Appendix A. The interviews and focus groups ranged from 20 to 50 minutes in duration. Three of the seven respondents were interviewed individually while the other four respondents participated in a series of focus groups consisting of two executives and the researchers. The nine question interview guide was utilized for both the interview and focus group sessions.

As this was an inductive study, the nine-question guide was driven only by adoption of innovations theory and the two aims of the study. With this in mind, follow up questions were vital so the researchers could acquire a deep understanding of the phenomenon. The transcription was done electronically in Microsoft Word where it was transferred to Microsoft Excel for coding. A discovery-oriented method was used (Merriam, 1998).

Data analysis and trustworthiness. According to Stake (1995), the appropriate analysis of a case study is a blend of a detailed description and an analysis of themes or issues. Following the theoretical framework of Hoerber and Hoerber (2012), the research team aimed to describe the step-by-step process of the Process of Innovation phase and analyze themes and issues related to the Determi-

nants of Adoption phase. Following transcription, each interview and focus group was analyzed by three independent investigators. The data were coded using a priori coding procedures guided by Hoerber and Hoerber's (2012) two phases of Process and Determinants of Innovation. At this point, the investigators analyzed each coded interview for a second time and validated the step-by-step process and confirmed two underlying themes. From there, integration and theory building took place through the linking and manipulating of abstract concepts and the creation of overarching and parsimonious hypotheses between the adoption of innovations theory, mobile app literature, and the study's findings (Merriam, 1998).

To ensure trustworthiness, this study incorporated member checks, peer examination, and an audit trail. In addition, extensive notes were kept describing the data collection process, categorization, and how decisions were made. To enhance the transferability of the investigation, rich, thick descriptions were provided so that "the readers will be able to determine how closely their situations match the research situation" (Merriam, 1998, p. 211). Finally, as mentioned above, data were collected until there was an emergence of regularities within responses.

Findings

As noted above, the purpose of the current study was to investigate the adoption of a mobile app within a major professional sport organization across the initiation, adoption decision, and implementation phases, and analyze the managerial, organizational, and environmental determinants which lead to the organization's adoption of the mobile app innovation. Therefore, the following section chronicles the findings from the current study and overlays these findings on the conceptual framework provided by Hoerber and Hoerber (2012). Direct quotes are provided to give insight into how the adoption of the mobile app by the organization was represented across each of the stages of innovation as well as the determinants that led to the successful adoption of the innovation. Table 1 provides a listing of each participant's job title and the acronym used throughout the manuscript.

Table 1

Interviewee Acronyms

Job Title	Abbreviation	Level of Project Involvement
Sales Manager	SM	Moderate
Social Media Manager	SMM	High
Director of Broadcasting	DOB	High
Sports Marketing Sales Executive	SMSE	High
Account Manager for Sponsorship Sales and Services	AMSSS	Moderate
Broadcast Maintenance Engineer	BME	Moderate
Safety and Security Coordinator	SSC	Moderate

Process of Innovation

Initiation stage. As noted earlier, this stage is marked with activities utilized to address the need for an innovation, searching for solutions to the need, and identifying and proposing suitable solutions (Damanpour & Schneider, 2006; Hoerber & Hoerber, 2012). Within the current enquiry, the McKinsey Study (MS), an analysis of all NFL websites, initially influenced the conception and creation of the current organization's mobile app. The MS was commissioned by the NFL to identify the needs of each team to improve its connectivity with fans, as well as improve the fans' in-stadium experience. According to the Director of Broadcasting (DOB),

We had a chance to have the league do an evaluation of our website a year ago—the league did all teams' websites and we got a report back that identified a couple of things we were really lacking on. And that had to do with interactivity and connectivity and allowing our fans to follow the team other than just the website, it was a real eye-opener.

As a result of the MS, the NFL mandated that each team adopt a new technology that would increase connectivity with fans. The league authorized two options: a handheld device created by FanVision (FV), or create a mobile app. Previously known as Kangaroo TV, FV manufactured a device fans could purchase for several hundred dollars (FanVision, 2013) or rent at the stadium, allowing them to watch replays from a variety of camera angles. However, there were several issues with the apparatus that were cause for concern as noted by the DOB: first, the FV device used analog technology as opposed to digital technology, meaning the device was outdated before it was even purchased by the NFL teams. Second, the devices must be rented by each spectator who would be required to leave a credit card until the device was returned undamaged and because teams have no ownership of the devices, insurance and liability would be costly and complicated. Finally, and most importantly, FV could not guarantee the frequencies would not interfere with headsets worn by the coaching staff as FV essentially established a closed circuit television network within each stadium they serviced.

After much deliberation, the current organization decided to create its own mobile app due to the prescribed shortcomings of FV and the ubiquity of smartphones and tablets among the general public and fans alike. Essentially, team administrators realized that nearly all of their fans had or would soon have a smartphone and with the adoption of an official team mobile app, the FV option did not make a lot of sense. The Broadcast Maintenance Engineer (BME) stated:

We decided that technically [FV] was a 10-year-old technology. And if we wanted to offer something to our fans, we didn't want our fans to have to purchase a separate device, and keep up with and make sure they brought it to the game and we didn't want the bandwidth to interfere with all kinds of other PCS [Personal Communication System] in the area. And the bot-

tom line is the majority of our fans already have smartphones...Something that would work on your phone would be ideal.

With the mobile app, the team would be able to provide all of the benefits associated with FV directly on their fans' phone eliminating the need to purchase, rent out, collect, and insure the FV device. In addition, the app is free and allows fans to watch replays and different camera angles (just as the FV device), employ stadium maps, check fantasy scores, league updates, and buy tickets. For all of these reasons the adoption of the mobile app innovation was quite compelling, as it was believed to significantly assist in both connecting better with the fan on non-game days as well as enhancing the in-stadium experience for fans attending a game.

Adoption stage. This stage is where top-level executives determine whether or not they will accept the proposed innovation and allocate resources toward the project (Damanpour & Schnieder, 2006; Hoerber & Hoerber, 2012). Within the current study, support came from the very top of the organization as the decision to create a mobile app was fully embraced by the president of the organization. The DOB recounted:

Once our team president embraced it [the adoption of the mobile app], it was not optional. It was basically communicated at one of our meetings that this was very important and it was a logical next step that we needed to put ourselves at the forefront of technology. And when these people [those working on the creation of the mobile app] call you and ask you for help, assets, or a response, I fully expect your cooperation and it's very imperative that we get this done for the fans so that we enhance their experience.

Not only was the importance of this innovation relayed by the president during a meeting, but the resources needed to fund the project were allocated mid-budget cycle, further emphasizing the importance and support provided by upper management.

Once support from organizational leadership had been established, the team had to make a critical decision whether to create and develop the app in-house or hire a third party to create the app for them. Through a relationship established via Twitter, the Sports Marketing Sales Executive (SMSE) arranged for an app development company, YinzCam (YC), to make a presentation to the team about their abilities to build a mobile app that would satisfy all of the team's needs. The SMSE described this process:

We found a vendor that was basically able to do all the things we wanted them to do, so that was the number one thing: go out and find a vendor that was to meet all the goals, be able to be multiplatform, have in stadium replays, to replicate our website and have it [the team website] get credit

for the hits, so the app was developed. Once I got her [CEO of YC] in here... we all thought, yeah, this is a no brainer.

The team was so impressed with their decision to hire YC, they suggested the NFL look into the company, which resulted in the NFL investing in YC and making them a preferred provider to all NFL teams. Once the decision to hire YC had been solidified the project shifted to modifying the app template to specifically meet the needs of the team and their fans.

Implementation stage. According to Damanpour and Schneider (2006), the implementation stage consists of, among other things, modifying the innovation, preparing the organization for its use, trial use, and putting the innovation into use by organizational members, clients, or customers (fans within the current study).

In an effort to make this project as successful as possible and to generate buy-in from as many organizational departments as possible, a cross-functional team was created consisting of members from various departments across the organization. The Sales Manager (SM) noted: "I think they ultimately decided on YC. And right when they were going through that we organized a cross-functional team, internally. This organization is big about cross-functional teams. It comes down from our team president."

Establishing the cross-functional team early allowed for the members to meet and collaborate on the project; departments such as Sales, Broadcasting, Media, Sponsorship, Safety and Security, and Facility Operations were all involved. These individuals worked together and communicated ideas that were pertinent to their department and relevant to the creation of the mobile app. According to the SM, "when this was being developed, we met, and literally, it was an open forum: What do you know? What don't you know? What do you think we should get? The DOB and another executive were taking notes down and appreciated the feedback from people." The ideas and information shared in the cross-functional meetings were then communicated to YC. Within the eyes of the organization, it was very important to have support from a variety of different departments as the mobile app was going to be far reaching and affect several different departments within the organization.

With respect to distribution, or putting the innovation into use, at the time of data collection the team was still in a "soft launch" phase. Essentially, the team had made the app available on the three major app markets but did not publicize or market the app. As noted earlier, even with no marketing efforts the app had been downloaded 66,000 times. This is yet another testament to the rapid growth and fans' thirst for this type of technological innovation.

The greatest challenges were discovered within the implementation phase. These challenges included the installation of Wi-Fi within the stadium, the time consuming nature of the project, the lack of organizational communication as the project progressed, and the differing protocol amongst the major mobile operating systems: iOS (Apple), Android, and Blackberry.

Fans at sporting events arrive equipped with smartphones and tablets, the tidal wave of emails, photos, videos, and text messages being uploaded and downloaded within the stadium can cause the entire mobile service network to come crashing down (Greenwood, 2013). Considering connectivity is now seen as important to sports fans as sight lines, parking, or concessions, dropped calls, missed text messages, and apps failing to load within stadiums are becoming high-priority challenges for many teams (Fisher, 2012). Further complicating the matter is the fact many sport stadiums create the perfect storm of difficulties in providing reliable Internet access. Typically, fans within stadiums or arenas are much larger and more condensed than office buildings and shopping malls, the vast amounts of steel and concrete used to construct most sport facilities, and the circular/oval shape of most stadiums each make the task of providing Internet access extremely difficult (Fisher, 2012). These challenges were felt by the team within the current study as noted by the Social Media Manager (SMM): “Outfitting a stadium for Wi-Fi is no small task and very few stadiums actually have that even now, so that was uncharted territory.”

The Safety and Security Coordinator (SSC) confirmed the sentiments of the SMM when he noted that “the Wi-Fi was an issue along the way and still is.” The challenges of installing a suitable Wi-Fi network were echoed by every interviewee within the current study, emphasizing the importance of having the proper infrastructure to support an innovation.

The second most notable challenge was the time-consuming nature of each necessary task during the creation process. The DOB noted “six months of the creation process were pretty intense,” as it took the organization six months to collect information from each stadium concessions area and input that data into a database system. The Account Manager for Sponsorship Sales and Services (AMSSS) expanded on her role in this time consuming process:

[I] input information on the amenities that we had, so I guess from that perspective just pulling information from different departments and matching up what was on lists, or spreadsheets, or maps with what things were actually laid out in the stadium and trying to see if there was enough room to put everything that we had available to a template that was on the app.

Between the collection of the requisite information to make the app as user friendly as possible and the Wi-Fi requirements within the stadium, the app did not officially launch for more than 12 months after the decision had been made to move forward on the project. Moreover, the app launched a full season later than many of the most hopeful employees anticipated for the launch date. This delay was discussed by the SMSE when he indicated that “it took a year from that point [the presentation by YC] to actually get it going. We all wanted to do it for that season [2012].” Yet, as noted by many interviewees, it was a priority to ensure that

the app was a quality product rather than rushing it to press and providing fans with a sub-standard experience.

The third challenge that arose was a deterioration of communication between those individuals most involved with the project and the rest of the organization. Those individuals most closely tied to the project stated that organizational communication was good throughout the entire process. However, some of the individuals who were not working on the project daily, even though they were on the cross-functional team, expressed that communication needed to be better, and they stated feeling a little alienated as the project neared completion. These sentiments were reflected within the commentary of the SM:

I think the whole communication thing could have been better. [App development] was going on and I don't think a lot of people knew about it...I think it probably could have been done a little bit better in terms of support as far as making sure we are focusing on the right things and then obviously the distribution part internally probably could have been a little bit better.

The SM also noted that the cross-functional team, while a great way to ensure representation across the entire organization, could have benefited by allowing people to volunteer to be a part of the team as many of the youngest, likely most technologically savvy, employees were never provided an opportunity to have their voices heard. It must also be noted that while the cross-functional team faced challenges, significant benefits were also a product of this project. Several interviewees noted that interactions on the cross-functional team led to members working on subsequent projects or interacting to make the organization more effective and efficient by collaborating in a way that had never been done before the mobile app project.

The final challenge was discovered quite late in the implementation process. Each of the three major operating systems (iOS [Apple], Android [Google], and BlackBerry) presented a unique challenge because standard procedures for each provider were distinctly different due to their proprietary operating systems. Not only was the approval process for updates different for each platform, the dimensions for each graphic included in the app were unique to each mobile platform, so each update or change to a graphic needed approval from each individual platform provider. This challenge was succinctly articulated by the DOB when he stated:

I think some of the biggest challenges that came back were on their side [iOS, Android, & Blackberry]. We had no clue, nor would we have, on how to navigate the waters of getting something approved with iPhone versus Android versus Blackberry - three completely different processes. So what we would find is there were certain ones that were really strict and really difficult and certain ones that were just kind of a rubber stamp.

While there were some vast challenges faced during the implementation phase, the adoption of the mobile app was deemed to be a rousing success at the time interviews were conducted. To a person, each of the participants saw great potential for the mobile app from a variety of perspectives including: enhancing fan engagement at the stadium, enhancing security at the facility, increasing sponsorship inventory, enhancing ticket sales capabilities, and increasing public relations with enhanced content control. The successful initiation, adoption, and implementation of the app were products of several determinants. The following section utilizes the second part of the conceptual framework by assessing the determinants which existed within the organization before and during the adoption of innovation process.

Determinants of Mobile App Adoption

The conceptual framework divided the determinants into three broad categories: environmental, organizational, and managerial. Similar to the previous section on the process of innovation adoption, the following section interlays the interviewee's responses with each of the determinants. Two themes emerged from thematic analysis as it related to the determinants. First, the organization understood the changing sport fan landscape, specifically the challenges of competing with the current in-home viewing experience for NFL fans. Consequently, the team was determined to use the mobile app as a mechanism to enhance the in-stadium fan experience. Second, the organization underwent a transformation at the managerial level as it related to risk taking and attitudes toward innovation.

Environmental determinants. As mentioned in the introduction, recent technological advancements have also enhanced the in-home NFL experience. According to Rovell (2012), an ESPN poll in 1998 revealed that 54% of fans preferred to stay at home to watch the NFL. That same poll conducted in 2011 indicated that 71% of NFL fans would now rather stay home and watch the game on TV. Interestingly, it seems as though professional sport tried for many years to make the home viewing experience as close to the in-stadium or in-arena experience as possible, and perhaps they were a little too successful. There appears to be a shift recently where teams are now trying to make the in-stadium experience as close to the in-home experience as possible (Kaplan, 2012).

These realities were not lost on the SSC who stated that the app "gives the spectator a way to connect instead of just sitting there watching the game, which it's always an issue in the NFL is getting the fans to come to the stadium rather than stay at home, so, I thought that [the adoption of the mobile app] was a good way for getting butts in the seats."

Expanding on this idea, the DOB remarked:

[The mobile app] will affect the quality in the stadium, so hopefully it will enhance all aspects because the biggest challenge all teams face right now, and this comes directly from the top, is that because technology has

advanced so fast and to such a level, we now compete with people sitting at home in front of their 55 and 65 inch flat screen TV with a killer sound system... We have to make it compelling for people to still want to come out here and spend their hard-earned money and make this experience so unique and so compelling so they can think I can't miss this.

Mobile apps have also become a revenue stream for many teams. Those fans most likely to engage with mobile apps during live sporting events have an annual income of \$50,000 or more (Fain, 2013). Therefore, the mobile app sport fan audience is very attractive to both the team and potential corporate sponsors. The Cleveland Cavaliers app is presented by Verizon Wireless and the team has included their mobile app as part of the inventory their corporate partner sales force is looking to sell (Lombardo, 2012). In 2012, Lowe's signed a four-year sponsorship with 77 schools represented by IMG College in which Lowe's is the exclusive home improvement retailer for the schools and has exclusive rights to each school's mobile app (Smith, 2012).

According to the SMSE, many of the revenue generating capabilities were envisioned by the organization from app's inception. Here, he explains the possibilities of the app:

The potential to be a positive revenue generator from an ad perspective or if you charge fans for it, depending on the model you came up with. Also, helping improve the fan experience so if the fans want replays, if they want information, they want to track their fantasy scores while they're here, they want to do a number of different things while they're at the stadium. Improving our PSL [Personal Seat License] retention, being able to improve hits to the website as far as information, being able to sell more tickets, merchandise, concessions in the future however that will play out.

Further supporting those remarks, the BME reported that:

We hoped [the app] would assist in ticket sales, because if we have ticket availability for a game, it's another way to push those tickets out to fans. It's also another way to remind fans that it's time to buy your season tickets in the off-season. It's on their phone and we hope they are using their app all-year-round, and they can get up-to-date information on players, and whether players are healthy or inactive or whether we've signed new players or new contracts.

Clearly, the idea of revenue generation was firmly planted in the organization's planning to adopt the mobile app. Moving from external forces to internal factors, the next two sections analyze both the organizational and managerial determinants related to the team's adoption of the mobile app.

Organizational determinants. As noted by Damanpour and Schneider (2006), most of the literature supports the idea that formal, centralized organi-

zations are less innovative than companies who invoke specialization, professionalism, and differentiation (e.g., Camison-Zornoza, Lapiedra-Alcami, Segarra-Cipres, & Boronat-Navarro; Damanpour, 1991). More specifically, certain organizational traits have been identified which significantly impact adoption of innovation (i.e., organizational complexity & size, economic health, unions, & external communications).

The most impactful organizational determinants in the current study leading to the successful adoption of the mobile app were the economic health of the organization and its external communications. Not surprisingly, economic health has been positively linked to the adoption of innovations (Damanpour & Schneider, 2006; Hoerber & Hoerber, 2012), and like many NFL franchises, the team in the current study was very prosperous. Interestingly, the mobile app project began in the middle of the team's fiscal year; however, the team managed to find the requisite resources to make the project a success. This financial support was emphasized by the DOB when he stated that "for all teams in the league that new [fiscal] year starts April 1, so by the time we got into this [mobile app project] budgets had already been set. We found it compelling enough and important enough that we found money to support [the project], which doesn't happen all the time around here so that tells you how important it was."

Also, effective organizations understand the need to be in tune with their environment and appreciate input from external sources that provide the organization with specialized knowledge on environmental trends (Damanpour & Schneider, 2006). External communications were embraced at many levels within the adoption of the mobile app by the organization in the current study. First, the NFL identified the need to commission the MS to provide an objective analysis of each team's website. Second, the team within the current study, paid heed to the suggestions made by the NFL via the MS. Finally, as discussed previously, the genesis of the relationship between the team and YC began on Twitter between the founder of YC and the SMSE within the team. Obviously, external relations played a significant role in the team's adoption of the mobile app. Being in tune with the external environment also includes knowing where your organization needs to consult experts in specific areas. The organization in the current study were able to take this approach and recognize the capabilities of YC "with YinzCam, I can't say enough about those people. If you are going to set up a brand new company from scratch—technology based—from people that are so technology based sometimes it's a little difficult to have them speak on your level so that you can understand it. They are incredibly responsive, they are very pleasant to deal with, they make it easy to understand and if they have gone over your head they very quickly come back and translate it to the point to where you can actually understand what they mean" (DOM).

Managerial determinants. Organizational leadership is instrumental with respect to the ability to effectively adopt innovation. Numerous personal and

professional attributes have been identified to be influential in the adoption of innovation process. The adoption of the mobile app within the current context can be viewed from three different levels of management: upper echelon (team president), project point person (DOB), and the cross-functional team assembled to assist in the adoption of the app.

Several demographics have been determined to significantly impact organizational innovation adoption. Age, gender, education, and tenure in position have all been deemed important determinants of innovation with younger (Damanpour & Schneider, 2006; Hambrick & Mason, 1984), female (DiTomaso & Farris, 1992;), highly educated (Huber, Sutcliffe, Miller & Glick, 1993) leaders, with relatively short tenure in their position (Hambrick & Mason, 1984; Huber et al., 1993) being the ideal candidates to have successful innovative adoptions.

Attitude toward innovation was the final managerial determinant identified by Damanpour and Schneider (2006). This area revealed some of the most interesting findings within this case and emerged as the second noteworthy theme. Similar to the findings of Hoeber and Hoeber (2012), the commitment to the innovation adoption was paramount to the success of the adoption of the mobile app within the current study. The organization had seemed to have recently gone through a transformation with respect to their willingness to take innovative risks. As discussed earlier, the organization had traditionally been very conservative. The conservative nature of the organization was not lost on even the newest employees as the SMM noted:

We don't take risks. We really don't, and that's just the organizational philosophy. There is good and bad to it. The bad is, you might miss out on the occasional opportunity; catch lightning in a bottle.... On the other side of that though because we can let others test things out, we can really do the best job possible with every endeavor and new media apps—we won't make as many mistakes because we let the others do the learning for us and we ask questions, so by not being the first in line we also are not the first shot.

These sentiments were also echoed by the SM:

I think we are an organization that is open to change, but we are not an organization that is going to change just for the sake of changing... This organization is very big on image... We are not on the cutting edge; we'll never be on the cutting edge. We basically just wait for other people to see if it works or not and then we'll handle it.

However, with respect to the mobile app project, the organization seemed to take a different and proactive approach. It was noted that the current President was much more receptive to innovative risk taking than previous leadership. This transformation was exemplified by the comments provided by the DOB when he stated:

We have tended to be extremely conservative in the past... We don't tend to blaze a lot of trails and stick our toes in the water first, we tend to let other people do it and if they don't get it bitten off by a shark, or boiled alive, or frozen, then we start studying, and we study it a lot before we pull the trigger...I've actually noticed a pretty big 180 on that issue just particularly in the last two years. There has been a big philosophical change within the organization so it was a pleasant shock that we were allowed to do this [create the mobile app] as early as we were and blaze that trail because typically we were not in that role. So, we were the guinea pigs, we were the beta testers and we had a lot of issues that hopefully a lot of other teams will benefit from.

The SMSE also noted how the president was much more supportive of risk taking within mobile app project when he recalled "the team president was always like well if we do this where will this put us in the league? The answer was always, 'Well, we'll be number one.' And, that was a big driving force in getting both the Wi-Fi and the app thing done." While it was noted that the new leadership within the president's position brought about a shift in the organization's receptiveness for innovation adoption, it is difficult to know whether or not the change in leadership is what led to a change in their philosophy on risk taking, or the change in philosophy led to a change in leadership.

Overall, the findings indicated that the organization went through all three phases of innovation adoption. The initiation stage was spurred primarily through the NFL and the MS, leading to the team striving to enhance their connectivity and interaction with their fans. After weighing out their options the organization decided to adopt a mobile app as opposed the FV product. Once this decision had been made, the President of the organization ensured that the project was fully supported with both financial and human resources. The implementation stage revealed a number of challenges related to Wi-Fi, internal communication, and operating platforms. Several determinants were found to propel the team. Enhancing the fan in-stadium experience, and increased revenue streams were the most prominent environmental determinants. Furthermore, the shift in management's attitude toward innovation was one of the most interesting findings.

Implications

The current study revealed a number of interesting findings. Theoretically, the current study began to bridge the gap between the sport management literature and organizational innovation. As technology continues to advance, sport organizations will continue to face the challenges associated with emerging forms of communication. For instance, when to adopt the technology, who will create it and how will it be implemented are all questions that will continue to arise. The current study's findings provide in-depth access to one professional organization's

successful innovation process and should serve as a benchmark for other organizations looking to tackle similar projects.

In addition, this exploratory investigation lays the foundational groundwork for future research to begin to assess the many intricacies of the mobile app market within sport. The current study also identified the need to treat this body of work as distinct from the rapidly expanding literature focused on social media and sport. While, social media is often one piece of a sport organization's mobile app, there are many more facets which can be utilized in a variety of ways to enhance the relationship between the sport organization and app user.

The environmental determinants discussed within the current study are but a couple of pieces of a much larger transformation within the technological space in the sport industry. Mobile apps are poised for continued rapid growth and provide many sport organizations with a platform to address numerous threats as well as a plethora of opportunities. For example, mobile devices provide the only platform for fans to feel like they are at the event long after it is over or even if they are hundreds of miles away (Morrison, 2011). Mobile apps provide the feeling of interaction anywhere, at any time. Fans are motivated to engage in mobile apps and social media which provide the immersion and excitement of attending an actual event (Morrison, 2011). While recent statistics indicate more fans are opting to stay home and watch the game on TV (Rovell, 2012), there is a trend where fans are engaging online via social media, typically on smartphones or tablets, often termed the 'second screen' (Morrison, 2011).

For professional sport organizations, this fragmentation of fans' attention reveals a need for the team to provide fans with a variety of entertainment, content, and technology to try and keep fans' attention. The importance of engaging fans away from the stadium/arena becomes even more important as recent research has indicated that over 50% of fans for teams within the big four sports reside outside of their favorite team's local region. For the NFL approximately 74% of their fans do not live in the same location as their favorite team (Fain, 2013). Therefore, a mobile app may be the solution to enhance displaced fans' engagement with their favorite team. Clearly, the current study is but a small step into what is likely to be a vast and robust line of sport management research.

Pragmatically, the current study revealed many interesting findings that could assist sport organizations looking to adopt a mobile app in the future. The current study revealed numerous trials, tribulations, and success encountered by one sport organization adopting a mobile app. First, as stated numerous times by various interviewees, a mobile app provides an organization the potential to interact with their fan base daily. Beyond increasing the interaction between the fan base and the team, the mobile app also may enhance the in-game experience and provide significant revenue streams. Embarking on such a comprehensive organizational project also proved to increase intraorganizational communication. Many participants indicated that due to this project they were provided an

opportunity to work with fellow employees they had never met before. Some of the relationships forged during this project led to greater cooperation between departments on future projects. Keeping with the interaction theme, the current study revealed the need for organizational leaders to make a concerted effort to ensure that communication lines remain open and active throughout the entire adoption process and not just during the initiation and adoption decision stages. Interviewees also noted that the process was much more time consuming than expected. Also, the need for technological support in the form of Wi-Fi throughout the entire stadium can be unforeseen and costly. Large innovative projects such as the one studied here, would be wise to include a contingency fund within the project budget to help cushion the blow of unforeseen costs, such as Wi-Fi installation.

Limitations and Future Research

The most noteworthy limitations were that only one organization was examined, and a small sample was selected to participate in the interviews. However, it is also important to mention that the organization did not involve a great number of employees in the adoption processes, so a significant percentage of the individuals involved were interviewed. At the time of the interviews, the mobile app was relatively new to the organization and its fans as it was in the “soft launch” stage. Thus, this study was not able to obtain an accurate depiction of how the app would influence ticket sales and game-day attendance. Interrater reliability rates were not calculated during data analysis as a means of trustworthiness. However, Chi (1997) suggested employing three investigators to account for discrepancies between a priori coding as it relates to interrater reliability, and this study did.

Study participants commented on the potential impact of the mobile app on the in-stadium experience for fans. Most believed it would positively enhance the fan experience; therefore, more research is needed concerning fans and their perspectives on how mobile technology has changed or improved their experiences in the stadium. Pragmatically, it would serve sport managers to have a better comprehension on which feature of an app are most beneficial to different types of consumers. Clearly, those fans who only use the app at the stadium on game day are going to enjoy different features than those fans hundreds or thousands of miles away from the stadium. Finally, the sport management literature had investigated the diffusion of innovation from a variety of perspectives and contexts, however, the use of adoption of innovation as a framework is rather scant. Overall, the conceptual framework provided by Hoerber and Hoerber (2012) could be utilized in a variety of settings within the extremely dynamic and innovative sport industry.

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Appendix A

Interview Questions

1. Discuss how your organization came to the decision to create your mobile app.
 - a. What were the major influences leading to the creation of the mobile app?
-Were these internal or external?
 - b. How did you envision the mobile app impacting the organization?
-Larger fan base? Method of advertisement?
 - c. How would the organization profit from the app?
2. What were the steps taken to create the app?
3. What type of risk did the organization associate with the creation of the mobile app?
 - a. How would you classify your organization's overall willingness to take risks?
-Is risk taking encouraged? Discouraged?
4. Who were the leaders of the project?
 - a. What was their role(s) within the organization?
 - b. Can you describe their style of leadership?
5. Discuss the type of organizational support the project had throughout the process.
 - a. Was there support from the beginning?
 - b. Were there individuals or departments who did not support the decision to create a mobile app?
 - c. How did support for this project change as it moved from creation to development to distribution?
 - d. Where did the financial support for the project originate? Was there any financial support from outside the organization?
6. How did your department work with other departments (internally or externally) to make this project a success?
 - a. What changes have you noticed within your department since the creation of this app?
-Have there been subsequent changes during the development and/or distribution phases of the app?
 - b. How has the mobile app affected your day-to-day work life?
-How has your work responsibility changed since the creation of the app?
7. How was the app distributed to the consumers?
8. What unexpected challenges did you face during the creation of the app?
9. Can you describe these challenges starting from the beginning with the initial idea, then creation and development to distribution?