Access to the ARC: How Hand Scanners Are Used for Entry

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Introduction and Context

Beginning at the start of 2018, the Anteater Recreational Center (ARC) required that UCI students register with a hand scanning system for entry into the facility. This system required that you enter in a 7-digit pin number and place your hand on the reading device to be registered in the system. This implementation was issued as an attempt to bring forth better convenience and security by no longer requiring gym patrons to rely on their student ID for entry. To centralize the task of entry, this feature seemed like one step forward in the evolutionary process of the ARC, however this newly implemented system still has some initial flaws. Constant breakdown, unfamiliarity with the system and limited communication all emerge as hurdles to integrate this system successfully.

This document details how the hand scanning system changes the movement and distribution of guests as well as how it impacts ARC employee's roles in adopting to this technology. This demonstrates a case of how individuals within an organization must adapt to a newly integrated information system. The driving question that helped demonstrate this research is: how does the newly implemented hand scan system disrupt or improve the work flow of the ARC and in what ways does it change the responsibility of ARC employees? By restructuring how this organization intakes guests by the introduction of a new information system, this organization must find a way to adequately communicate and distribute information for novice users.

Methods

To gain access to the ARC, I made sure I had permission from the ARC's manager to schedule appropriate times to conduct my research. My schedule consisted of visiting the ARC for 2 hour increments on five separate days, totaling up to 10 hours. When scheduling these dates, I made sure these observations were conducted at various times of the day to get a holistic view of the organization.

Figure 1 details the hours and days that I scheduled my observations.

Date	Time	Hours
January 29, 2018	9:00 pm – 11:00 pm	2 hours
January 31, 2018	3:00 pm – 5:00 pm	2 hours
February 2, 2018	12:00 pm – 2:00 pm	2 hours
February 5, 2018	9:00 pm – 11:00 pm	2 hours
February 7, 2018	3:00 pm – 5:00 pm	2 hours

Figure 1 – These dates reflects the time and hours that I spent observing the ARC.

I found that the front entrance of the ARC provided valuable insight on employee and gym patron interaction through the hand scanning system. I initially wanted to conduct my observations within the employee's designated desk area, but instead I did a bulk of my research away from the desk location. Since there were not enough seats and much of the tasks being done involved movement of employees from one location to another, I did not want to be a burden at their work. Although my initial position of observation has changed I still believe that I was close enough to perceive the body language, interactions, and action involved. However, on January 31 and February 7, 2018, I did manage to gain access behind the desk area given that it was a slower day than usual.

In my visits to the ARC, I managed to take thorough field notes from my laptop. Since much of this organization is run through the usage of desktops, I felt comfortable using my laptop in this setting. I would initially type out bullet point notes of what I observed within my field notes and would revisit

these and flesh out the details of what I experienced. My focus within these field notes was detailing gym patron and student employees' interactions with the hand scanning system. I documented the effectiveness, recurring struggles, and consequences of the system. When I gained access behind the front-desk area, I documented the various responsibilities that the employees did and their attitudes towards these tasks. In addition, I noted employees' body language, their emotional labor, the way in which they socialize with each other and how they balance work and school.

Findings

<u>Finding 1</u>

The ARC at night usually receives a heavy amount of traffic with many coming in to complete their day with a quick workout. By this time, each part of the facility is in use with gym machines, basketball courts and treadmills, all of which are typically in use. Housing communities, fraternities, and sororities all unite during this time to watch competitive basketball games take place. Many want to enter as quickly and effortlessly as possible, but issues within the hand scanning system often delay their entrance for several minutes. The ARC employees must prepare for such an influx of students and hope that the hand scanning system withstands heavy traffic. However as more and more individuals pile up into the entrance of the ARC, a breakdown is inevitable. Whenever the system indicates a signal such as "network required error", "try again", or some other ambiguous response, gym patrons understandably become growingly frustrated that their attempt did not register for the first time. Karen, an energetic and young 20-year-old ARC employee, is fearful that all the blames lies on her when the system malfunctions.

The only way that gym patrons can remedy this problem is to talk to an ARC employee like Karen. However, Karen is often preoccupied in responding to front desk issues of other patrons looking to resolve separate issues. Karen is always on her toes trying to manage the crowd of incoming patrons. On most nights, there are only one or two other ARC employees assisting Karen in resolving gym patron issues, but on most weeknights this task may be too big of an issue to handle when the hand scanning system keeps on malfunctioning for novice guests. These student employees find themselves bouncing around the small desk area answering as many questions as possible.

When dealing with issues involving the hand scanning system, Karen and other employees follow a step by step process by asking questions to understand what the problem may be. These steps are posted on a sticky note posted on the monitor of their desktop. Questions which range from messages such as like "what does the screen say?", or "when was the last time was you came to the gym?" are displayed on the note as well as other procedures to follow. If the two hand scanners don't register the guest information, Karen would either redirect them to the sales desks on the second floor to register to get their hand scan or would allow them entry through a swipe of the ID card.

Eric plans on getting a quick workout with his friends who had just entered the gym not too long ago. However, as he walks into the ARC's entrance, he notices that the line spans from the outside of the building. Annoyed that he has to wait in such a long line, he decides to stay and wait for his turn to enter the facility. Eric texted his friends that he has arrived and sees them waiting on to enter from the other side of the entrance. The ARC at this time is filled with sounds of whistles, buzzers, balls bouncing, people screaming and sneakers squeaking, so Eric and others are eager to get in as soon as possible to use that energy for their workout. But as they stand in line for several minutes, this energy soon turns into frustration.

After about 5-8 minutes of waiting in line for his turn to use the system, Eric finally enters his seven-digit pin number and places his hand on the designated area. Unfortunately, Eric's hand does not register with

the system and the system requires that he enter his pin and hand again. During his second attempt to enter, the small green-text interface spits back a "network required" error message onto the screen with minimal of feedback on how to proceed. In his best effort to find a way inside, he decides to try to get the attention of the ARC employees for assistance.

As Eric turns and tries to find assistance for the entry to the ARC, he sees that all the ARC employees are preoccupied in answering separate questions, including Karen. As Eric tries to get the attention of the ARC employees as well as save his spot in line, he is ultimately holding up the line for everyone else to enter. Eric was unsure whether the gym patrons were merely socializing with other guests and employees or assisting in some task. Since the desk and computer screen monitor act as physical barriers between Eric and the ARC employee, it is hard for both parties to recognize and solve the problem of the system. After several looks of confusion and frustration from Eric's face, Karen quickly notices that there is a problem and looks to answer his question.

Karen begins to ask Eric several questions regarding the issues with the hand scanning system. Eric responds that the system keeps producing the same error, so Karen then asks if he can try the other hand scanning system. Eric proceeds to make his way towards the other system, ultimately cutting off the people who have been waiting in that line for several minutes. Eric inputs the same information as he did on the first hand scanning system, but this also gives back another ambiguous error. When all else fails, Karen ultimately takes his ID card and allows him to enter.

Eric finally enters in with relief by shaking his head and saying "finally!" under his breath. After several minutes of struggling, he finally gets to meet his friends who said that this process "took 10 years", with the others responding, "I know!".

Finding 2

One afternoon, a gym patron comes in expecting that the entrance to the ARC only required his ID. This gentleman is named "Joel" and is a student at UCI in his early 20s. When Joel is denied entrance upon utilizing his ID, he is redirected to using the hand scanning system. The problem is, he hasn't registered his hand scan within the ARC's database. Joel comes back to the front desk with disbelief that the front-desk cannot take his ID and that he must register with the sales desk upstairs. He begins to raise his voice and says, "Please check my ID, why can't you do this?!" Noting his frustration, the front desk receptionist reiterates that the only solution is to go upstairs and to get registered. In front of the receptionist, there is a handy sticky note detailing a guideline of what to ask when dealing with flaws pertaining to the hand scanner. She seems to be basing her actions on the contents of the notes while keeping her composure dealing with an irritated member. Failing to reach a compromise, Joel finally goes upstairs and gets himself registered.

While Joel is upstairs, several of the front-desk receptionists talk about other issues dealing with impatient and rude customers. The front-desk receptionists are immune to frustrated gym patrons and must keep their composure when confronted with such issues. The front-desk employees believe that this process of entering the ARC is intuitive and that all you have to do is follow the directions on the screen. They discuss how working with within the front desk can be frustrating because they feel like they are responsible for the failures of the hand scan not working properly. Both the gym patrons and the student employees are adjusting to how to work with the hand scanning system.

After several minutes, Joel finally comes downstairs to enter via the hand scanning system. He initially goes in and places his hand waiting for the entrance to activate. He forgets that to enter, one must both enter their ID and place their hand to the scanner. The front-desk assistant notices this and reminds Joel of

what to do. Following her directions, Joel successfully manages to enter the facility after several minutes. His attitude changes and tells the front-desk assistant to "have a nice day" as he proceeds to begin his workout. Both front-desk receptionists both note the sudden change of attitude from Joel and continue to discuss the frustration in dealing with impatient gym patrons.

The two instances dealing with the hand scanning system illustrate the struggles and frustration which occurs when organizations attempt to introduce a new workflow system to automate and centralize responsibility to a single device. The process of entering the ARC isn't as intuitive as it seems, especially when there is a heavy traffic of individuals trying to enter all at once. During high-volume environments, communication between the gym patrons and ARC employees becomes difficult because of the way in which both must deal with ambiguity, spatial organization, and sound. The process of restructuring and teaching guests how to enter is a cumbersome task for both the staff and guests.

These findings also suggest that individuals working at the front-desk must maintain emotional labor when dealing with high traffic environments, flaws within the system, and with rude and impatient guests. By following a set procedure on how to handle problems, this helps ARC employees deal with new challenges. In addition, although the ARC employees believe that the process should be intuitive, most novices who try to operate within this system are often intimidated and uncertain on how to use this new technology. A mutual understanding through direct communication should be made so that the gym patrons enter inside the facility in a quick and timely manner.

Discussion

This organization is still finding a way to deal with the structural change of implementing a new technology. Prior to 2018, entry into the ARC was either through verification with a student ID or through the entrance of the hand scanning system, but now all students are required to enter via the hand scanner. By cutting off the options for entry, the organizational flow is now responsible for one specific process which makes lines to the ARC longer. The fact that this technology malfunctions regularly makes the transition to this new system even more difficult.

ARC employees now must find a way to work with and adapt to new information systems to fulfill organizational practices. The front-desk ARC employees must face new responsibilities and challenges in dealing with the malfunction of the hand scanning system which ultimately can disrupt the flow of incoming gym patrons. These systems add more work for the employees who have to monitor the breakdown of these systems when they occur. As noted, they must follow a step by step process of identifying the problem and finding a best possible solution located on a sticky note posted on the employee's desktop. When all these alternative solutions fail, the ARC employees must work around the system to allow entry. These complications undoubtedly create frustration among gym patron who expect that this process should be simple. ARC employees now must delegate their responsibilities to either issues involving the hand scanning system itself or other interpersonal questions within the front-desk and find a balance between the two to maintain good service.

The physical arrangement of where the ARC employees are in relation to the gym patron and the hand scanning system makes communication between the two parties difficult. The ARC employees are physically constrained to assist from their desk area to pinpoint the issues the gym patrons are having. Since most of the work done by the front desk ARC employees are done within the desk area, it would be detrimental for the organization if they were to stand beside the hand scanning device to assist while ignoring tasks needed to be completed within the front desk such as answering phone calls, answering questions and keeping track of memberships records. However, on slow hours of the day, most of the employees are studying by making use of the desktop monitors and may ignore a struggling gym patron

trying to enter inside the ARC until they are notified by the patron. A possible solution for this issue is to have the hand scanning system on the front-desk itself, so that whenever a patron has issues, they don't need to be approach the desk for help.

Viewing this organization as a machine, the introduction of the hand scanning system may be cog that doesn't fit currently but needs a bit more oil to help be implemented correctly and efficiently. The transition of policy still needs to be tweaked to ensure a smooth operation of handling gym patron flow. In addition, this system ultimately decreases the powers of the front-desk employees who are constantly reliant on this system to work correctly to maintain fluidity of the organization. Most of the front-desk employees are not trained to troubleshoot this complicated device, so they must find a way to work around the system by reverting to past policies.

Some questions about this organization's practices still remain. For instance, in what way does this organization measure the effectiveness of the hand scanning system? Is it based on the degree of success, the amount of people granted access, or is it through the time the overall entering process takes? Furthermore, I did not witness a supervisor or manager monitoring the front-desk employees' handling of malfunctions of the hand scanning system. So, what does it mean to do a good job as an ARC employee? Is it measured by the amount of times the system failed to work or is it based off your friendliness and customer service skills? In attempt to answer these questions, I would like to make special note on how communication is done and how ARC employees interact with their supervisors when dealing with the hand scanning system.

Conclusion

This document looked to analyze how the Anteater Recreational Center (ARC) managed the integration of a hand scanning system as a primary way of entry for the thousands of students at UCI. As a way to analyze the effectiveness and impact of how the hand scanning system was used, this study looked at the ways in which the hand scanning system affected organizational flow and how it changed the responsibilities for ARC employees. After observing this organization for 10 hours at various times of day, this study documented the behaviors, attitudes and actions between the ARC employees and gym patrons as they used the hand scanning system. The findings of these observations indicated that communication was vital for this organization to maintain its flow. However, communication between gym patrons and the ARC employees is made difficult due to spatial organization, ambiguous errors provided by the system, and environmental distractions. ARC employees' responsibilities were shifted and compelled them to change the way in which they handled gym patron's request regarding this new system.

Although the ARC attempted to incorporate newer technology to help in better automating the entry process for guests, this process seemed to prolong the overall entry process especially in times of high traffic. To expedite this process, a redesign of the system should be addressed so that the organization maintains productivity. In addition, consideration of facilitating training to front-desk employees on how to troubleshoot this technology will be a valuable tool in managing this transition. The flows of communication is essential for this organization to incorporate this technology in a successful fashion.