CASE

FROM: Emil van der Poll <vdpolae@unisa.ac.za>

TO: Lebogang Thandiwe Shabalala <shabalala.LT@skyworth.co.za>

CC: Rafiq Hassan <Hassan.R@tablemountainmalls.co.za>

SUBJECT: Table Mountain malls project

Dear Lebogang,

I trust you are doing well.

I'm in the process of ideating a project that might be an interesting (and profitable) software project for Skyworth Software Solutions.

The project idea concerns the Table Mountain Shopping Centre chain. Table Mountain Shopping Centres are a chain of malls located across the Cape Peninsula. I regularly visit one of their shopping centres that is close to where I'm staying. I do not only go there as a patron, but also to visit my friend—Rafiq Hassan (CC'd into this email)—who is the shopping centre manager. Information Technology to support shopping centre operations regularly arises as a topic in our chats about the day-to-day management of the shopping centre. Recently, we discussed the absence of automated parking pay stations at Table Mountain shopping centres. According to Rafiq, they have been avoiding the use of automated pay stations to counter the negative effect that rapid technological advances have on employment growth. That is, they prefer to use the services of parking attendants (i.e., car guards) to help keep people employed amid the rush by various industries to adopt technology.

Parking attendants are formally employed and paid a weekly wage by the Table Mountain Shopping Centres chain. To boost their weekly wage, parking attendants rely on cash tips. Nonetheless, Rafiq acknowledges the advantages of having a cashless parking pay station and its associated technologies. For example, if you arrive at a station, you wave your hand in front of a motion sensor to initiate the issuing of a parking ticket. Motion sensors advance health safety by reducing the risk of contracting a virus like COVID by preventing physical touch. Furthermore, sensors installed at each parking space can detect the presence or absence of a vehicle; in the instance where it detects that a parking space is not occupied, it communicates this information to the parking station, which, in turn, prints the available parking space location ID (e.g., please park your vehicle at parking space A25) on the ticket that is issued to the driver. Therefore, human parking attendants are not needed (see Waldron-Curry, 2023).

To compete with these technological advantages, parking attendants use walkie-talkies to coordinate the allocation of an available parking spot. However, Rafiq observes that transaction technologies have been detrimental to cash tips. On the

verge of the 4th industrial revolution, the exchange of physical cash has been showing a significant decline. Needless to point out, nowadays it is convenient to pay for purchases by simply swiping, inserting, or tapping your bank card. From my own experience and observation, near field communication (NFC)[1] technology has exacerbated the impact that technology-driven payments have on cash tips. Before I owned an NFC-enabled smartphone, I would pay for goods and services by tapping my bank card; if I did not have cash on me, I would withdraw cash at an ATM to tip the parking attendants. When I upgraded to my current NFC-enabled smartphone, it solved an issue I always had with wallets; I now feel lighter not having to carry around their bulky weight and am keeping tabs on fewer things – I'm only vigilant concerning my car keys and phone. And it is worth noting, the automotive industry is already showing innovation of starting a car by smartphone (DroneMobile, 2023). So, soon I will be going to the shops with only my phone.

The personal convenience of NFC technology has, however, been to the detriment of cash tips. ATMs are not yet NFC-enabled, which means that I cannot withdraw cash from an ATM using a smartphone. To address this issue, I bought a phone cover with card pockets on the back. My card pocket phone cover, however, does not address the broader phenomenon of transaction technologies that are gradually making cash transactions obsolete. I suggested to Rafiq the launch of one of two information systems project ideas—Project X and Project Z—that is structured around the utilization of digital technology for the financial benefit of the parking attendants:

Project X involves equipping parking attendants with a Wi-Fi-enabled point-of-sale (POS) device – the new design that resembles smartphones (see Figure 1 below) in physical appearance. A software development vendor then designs customized merchant account software that can read the magnetic stripes of bank cards and the NFC chips of smartphones. In addition, the software streams a live video feed (from the shopping centre's existing CCTV system) of parking areas to help attendants identify available parking spaces. Each parking attendant will be issued a unique identification number to access their merchant account on the basis that parking attendants will share POS devices – if an attendant finishes a shift, they hand over the POS device to the attendant who's working the next shift.

[1] "NFC is a method of wireless data transfer that allows smartphones, laptops, tablets and other devices to share data when in close proximity. NFC technology powers contactless payments via mobile wallets like Apple Pay and Google Pay, as well as contactless cards. …NFC is a method of wireless data transfer that allows smartphones, laptops, tablets and other devices to share data when in close proximity. NFC technology powers contactless payments via mobile wallets like Apple Pay and Google Pay, as well as contactless cards. ...[i]t is limited to sharing data with other devices within about four inches. That's why a consumer who's paying with their mobile wallet must place their device close to the contactless payment reader." (Fintech Insights, 2022)

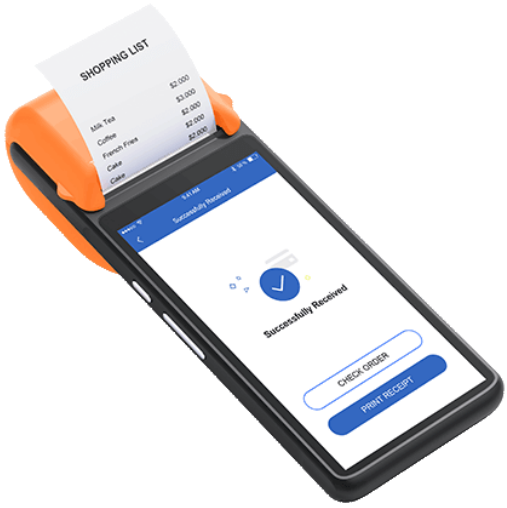

Figure 1. Android mobile POS (Telpo, 2023)

Project Z also involves equipping parking attendants with a Wi-Fi-enabled point-of-sale (POS) device, but instead of designing new merchant account software, purchase off-the-shelf software to tailor for parking attendants. Regardless of whether Tablemountain chooses Project X or Project Z, I infer the following macro flow of payment activity concerning patronage at their shopping centres: upon concluding the purchasing of products and services inside the mall, I return with my purchase to the parking area. Arriving in the parking lot, I use NFC technology or my bank card to communicate with the parking attendant's POS device and make a cash deposit into their merchant account.

Kindly indicate whether Skyworth Software Solutions may be interested in pursuing this project. I'm looking forward to hearing from you.

Best wishes,

Emil van der Poll (PhD: Information Systems)
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Enter Bruce "The Dragon" Lee's way of the intercepted fist: One fatal strike!

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