B2B ADOPTION OF MOBILE PAYMENT SYSTEMS: MANAGER INSIGHTS USING A QUALITATIVE APPROACH

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Mobile payments have become one of the most disruptive financial instruments in the B2C (Business-to-Consumer) market this decade by revolutionizing the consumer shopping experience. Despite the technology’s success in the B2C model, it has not brought a similar adoption experience for B2B (Business-to-Business) applications. Research in this area has been limited to identifying the resistance to adoption in the B2B environment. This exploratory research identified that while barriers exist, there are opportunities to increase the adoption of mobile payment technologies within B2B organizations. There is a large amount of misinformation about the processes associated with adoption that need further investigation. The application of the technology could flow naturally into the B2B sector, but internal organizational struggles could prevent exploring the options. The future of adoption may instead rest on the concept of “reverse adoption,” whereby clients would need to request mobile payment options, otherwise, investments in the technology would not be considered by the organization.

INTRODUCTION

Mobile payments are a recent phenomenon that allows mobile devices to conduct financial transactions without the physical use of traditional payment methods (money, credit card, or check). Most technology is seen predominantly in the B2C (Business-to-Consumer) market. The next logical step for applying this technology is within the B2B (Business-to-Business) model. As businesses become more comfortable with this payment technology, they might be more willing to use mobile systems as a mechanism to pay for services, supplies, and possibly capital expenditures. This topic has not been explored in the current literature and is an important research topic as mobile payments are most likely in the near future for the B2B sector. This study will identify potential obstacles at the managerial level to adopting mobile payments in the B2B environment using a qualitative method. The results provide realistic limitations and barriers to integrating mobile technology and possible complications from adopting it within organizations.
LITERATURE REVIEW

It has become clear that mobile devices will be at the center of consumer technology usage for years to come. The mobile device has assimilated a consolidation of convenient methods of digital communication that allows the user to easily exchange instantaneous data with the external world through the use of traditional phone, SMS, Email, Internet access, or through the initialization of software applications. The convenience and ease of use of the mobile device is bolstered by the constant high-speed Internet connectivity that is achieved through wireless network carriers and local Wi-Fi hotspots that has helped the “always on” culture in the US. As a result, the mobile device is an essential tool that has integrated the tangible human experience into the digital world (Sharma, 2011).

The most practical extension of mobile device technology is the potential use for conducting financial transactions through mobile digital payment systems that are available with a variety of software applications. Mobile payments are considered as secure and perhaps more secure than traditional online banking. Their convenience and ease of use has made them an invaluable tool for the consumer (Krishnan, 2014; Schierz, 2010). These payments allow the collapse of time and distance for almost any transaction and impacts our lives every day. This phenomenon is creating new opportunities and it is only a matter of time before mobile payments are used in frequent B2B transactions and possibly capital expenditures.

The excitement of the possibility of mobile payments began during the early 2000’s. Karnoukos, (2004) discovered that the millennial generation found the idea of the possibility of using a mobile device as a method of payment appealing. He found that they wanted a product that was easy to use, and convenient to carry. His conclusions were reinforced by an analysis of the millennial consumer from Kim, Mirusmonov, and Lee (2004) who also concluded that the ease of use and convenience are also the primary motivators for the consumer to utilize mobile payment systems (Kim, 2010). Their contributions helped introduce the consumer’s behavioral motivation that were used to create the original mobile payment systems in the last half of the 2000-2010 decade (Karnoukos, 2004; Kim, Mirusmonov, and Lee, 2004).

The early attempts of creating mobile payment platforms between 2000-2010 were a failure (Mallet, 2008). It was discovered that early digital payment systems used from mobile devices failed because electronic invoicing was not easy to use for either the consumer or businesses. As a result, neither group felt the need to transition over to the new technology (Dahlberg and Ooni, 2007, Schierz, 2010). However, the formation of strategic alliances between technology and financial service companies eventually conquered the ease of use problem for the consumer by exchanging funds instantly rather the relying on electronic invoices (Seelos, 2007).

Fintech ventures figured out how to accomplish this through the creation of digital payment systems that interfaced with financial institutions that primarily relied on the National Automated Clearing House Association’s Automated Clearing House (ACH) to transfer funds from one account to another. The ACH processing time for funds transfer could take several business days for a single transaction resulting in delay of the finality of payment for both the payor and the
payee. Digital payment platforms were able to circumvent the ACH processing time by fronting the initial cost of the payor’s transaction and digitally transfer the funds to the payee while finalizing the bank transfer through normal ACH transfer process (Estep, 2016).

Mobile payment software is an extension of the digital payment system that is available as an application for any mobile device. The software connects frequently used digital communication data including phone number, email, or SMS as a unique identifiable representation of the user and connects them to the user’s bank and or credit card account. To initiate a transaction, both the payor and the payee must be enrolled into a payment platform on their mobile device. The user enters the software application and initiates a transaction by entering another party’s unique identifier denoted by phone number, email, or SMS. The transaction is secured through encryption of a one-time uniquely customized token preventing all parties from accessing either user’s financial information. Depending on your bank’s payment system, funds are either transferred from your bank account or charged to your mobile phone bill. The versatility of these services comes from being integrated into the mobile device which also enables Internet access, telephone capability, and the use of Near Field Communication technology to purchase goods at a Point of Sale in a physical location. These capabilities allow the mobile device user to pursue an omnichannel experience for conducting any type of financial transaction. The value proposition delivered from mobile payment systems has led to a gradual increase in use of mobile payment systems within the business to consumer model in the United States (Geerling, 2018; Payne, Frow, and Eggert, 2017; Pousttchi et. al, 2015).

Surprisingly, the area of business that has lagged this trend is the B2B market. Despite the broad application potential, businesses have not embraced the technology as their preferred method of payment (Bapna, 2011). Traditionally, businesses primarily rely on trade credit as the price promotion tool that allow customers and suppliers to delay payment for 30 to 60 days of interest free loans (Mian and Smith 1992). While waiting on the collection of monies owed companies frequently address payment processing inefficiency with the use credit cards or lines of credit to fulfill working capital needs. However, these products include interchange fees and interest charges that make a multitude of transactions cost prohibitive. The ability to instantly pay bills and suppliers eliminates previous inefficient models, which require a lag time between when the payment is made and processed. It will eliminate unnecessary opportunity costs from delayed investment by relying on internal financing that will increase the productivity for the firm (Chen and Guariglia, 2013).

B2B consumers are unaware of the impact of increased cash flow efficiency has the valuation of the firm. The ability to instantly pay and process transactions will improve the firm’s liquidity by accelerating their achievement of optimum cash levels and increase efficiency in receivables turnover resulting in more available cash to maximize the firm value (Martinez-Sola, Garcia-Teruel, and Martinez-Sola, 2013; Frennea, Han, and Mittal, 2019).

The future transition to mobile payments in the B2B market faces two major obstacles. They are the risk averse tendency of managers and regulatory components of federal and state agencies. First, is the psychological, emotional, cultural, and practical resistance of current managers that
cause them to hesitate with the major change. This hesitancy is a culmination of their experience through previous successes that have led them to the supervisory position they currently occupy. This gives them an unconscious bias to major changes because their previous methods are known, proven, and provide future outcome certainty. Acquiring new methods are unknown, unproven, and provide future uncertain outcomes. As a result, risk adverse managers have a cultural and practical attachment to previous paper methods (Teo, 2015). Since their success is dependent on repeatable results, they are unlikely to take chances without a certain favorable outcome and typically approach new technology with skepticism.

This is the classic agency problem described by Carpenter, Pollack, and Leary (2003). In their paper, they describe the problem of managers in high tech firms risk aversion to international expansion. Since technology is an area where new entrants are a constant threat, logic identifies that business risks for domestic vs international operations are the same. As a result, the risk avoidance of managers is indirectly holding back the firm from gaining sustained growth to increase shareholder value (Carpenter, Pollack, and Leary, 2003).

The ingrained change resistance behavior of current managers might be overcome through encouragement from senior executives and their ability to sell middle management on the importance and potential benefits of cost savings, cash and supply management. Ultimately, it will be the organizational fear of missing out on operational efficiency that will force the technology integration across industries and result in a permanent conversion (Listwan, 2017).

Mobile payments are one of the few integrated technologies that is expected to receive explosive growth during this decade. The current marketing strategy of major financial institutions is to maximize mobile payment revenues as a method of product introduction to maximize market share of the mobile payment market (Malesey and Cherry, 2021; Vieira, de Almeida, Agnihotri, et al, 2019). This is causing the cannibalization of traditional payment systems as the cost benefits of digital payment systems far outweighs the inefficiency of legacy systems (Perry and Ferreira, 2018). As a result, the conversion of B2B payment systems is an essential business expense that is required for firm competitiveness.

**METHODOLOGY**

As one of the major obstacles identified has been the risk averse tendency of managers, this study employed qualitative methods to illuminate the opinions, feelings, thoughts of current managerial practitioners about the potential application of mobile payment systems in a B2B context. Qualitative research is utilized due to the lack of recent research available on this topic and the need to identify deep insights from managers directly before a quantitative study can be designed with more empirical accuracy (Alasuutari, 2010). Through rich and detailed discussion, exploratory research allows for the flexibility quantitative studies do not in that follow-up questions may be asked to clear up information gaps or incomplete answers by respondents.

The qualitative interviews were intended to inductively explore managerial perspectives on mobile payment systems and to provide a baseline of required capabilities for the adoption of mobile payment systems into the B2B market. Industries were selected that had a high likelihood
of future adoption of mobile technologies. The identified managers were able to speak with authority regarding their firms’ activities and their potential willingness adopt mobile payment systems for a variety of company expenditures. Thus, a non-probability sample was chosen that was representative of the issues being examined rather than the entire range of managerial experiences of the sampling frame. After the interviews with six managers, there was little incremental knowledge gained and the interview process stopped as the protocol for qualitative research dictates (Saunders et al., 2017). Since more comprehensive data was collected by the managers, six was seen as an adequate sample size for this research objective (Hennink et al., 2017; Morse, 2000; Guest et al., 2006).

The list of manager’s profiles who participated in the interviews are in Table 1. Please note that the names of the participants have been withheld and the names of their firms have been changed to guarantee the anonymity of those managers who participated.

<table>
<thead>
<tr>
<th>Participant #</th>
<th>Industry</th>
<th>Position</th>
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<tbody>
<tr>
<td>1</td>
<td>Retail</td>
<td>VP Marketing and ECommerce</td>
</tr>
<tr>
<td>2</td>
<td>Retail</td>
<td>General Manager of Store</td>
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<td>3</td>
<td>Insurance</td>
<td>Loss Control Director</td>
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<td>4</td>
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<td>Senior Accountant</td>
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<tr>
<td>5</td>
<td>Insurance</td>
<td>Client Service Manager</td>
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<td>6</td>
<td>Construction</td>
<td>Managing Partner</td>
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The interviews were conducted individually using a semi-structured in-depth interview approach and lasted between 90 and 120 minutes. The participants were asked to comment on a series of questions regarding their knowledge of mobile payments and their thoughts about the potential application to B2B payments. The same questions were used for each of the interviews and recorded via conference call.

Analysis and Findings

The interviews were reviewed through content analysis and coding responses, using a clustering method. With the topic currently unexplored in research, themes were important to identify and categorize to find consistent data among the respondents to develop factors that managers would consider in the adoption that could possibly be used in future quantitative research. A phenomenological approach was used for coding the responses due to the exploratory nature of the research (Teherani, et al., 2015).
Personal use of mobile payments. All the managers (n=6) were familiar with the concept of mobile payment systems, but none of the respondents presently used them in their businesses. Although personally familiar with the technology, it confirmed that mobile technology adoption in B2B industries is well behind current consumer usage. Several of the respondents commented on their own personal usage of mobile payments, or their customer’s ability to pay with certain mobile platforms, but it had not yet been adopted for any of their related business transactions.

- “I use Venmo for paying someone in the office for lunch.”
- “It impacts the consumer side quite a bit.”
- “Every year, mobile becomes a larger portion of consumer sales.”

Convenience of mobile payments. The most common reason for using mobile technology in the consumer environment was convenience. As most consumers carry their mobile phones with them at all times, paying through mobile technologies is seen as being more convenient than most other ways. Instead of carrying credit/debit cards or cash, with a phone usually on their person, it is much easier to pay via mobile technology.

- “As a personal customer, I enjoy the convenience.”
- “I think the big thing is convenience.”
- “It’s a lot easier to carry the phone.”
- “The main reason that I like using the mobile device is that it is convenient.”
- “I would say a mobile device has ease of access.”

Managers still used PC/laptops for most of their business, but almost all of them commented that mobile is more accessible. Only one respondent had moved to some mobile transactions for employees due to phone’s accessibility, each respondent recognized that most people had their phone within reach at all times. The opportunity costs for equipment for companies would be low, so the groundwork in that terms would be laid for its implementation for B2B transactions. This underscores the ability of managers to have the technology needed for mobile payments already in their possession, therefore, the barriers to adoption were further explored in the interviews.

Barriers to mobile payments adoption. The most cited barrier was the current payment controls in place by organizations, which was mentioned by two-thirds of the respondents. Many fell under the “it was always done this way” mentality in their company’s upper management. It seemed that while mobile payment systems would make the actual process more efficient, the changes to the current technology and behavior was too large for upper management to undergo or even explore the process at this time. Two respondents mentioned that their business customers were “older” and that mobile payment systems would only set them up for failure. These customers valued personal interactions and understood how the current processes worked and implementing new payment processes was seen as a way to incur deep customer dissatisfaction among their clients and was therefore not a consideration.
• “I am doing a PO or ERP. It gets approved. The A/P comes in and they pay it through the credit card or they issue a check. It is more inside corporate controls.”
• “Most of my customers are older business owners and they prefer to call in to ask and answer questions. They like something that is low tech.”
• “In our industry the turn around time for payments is 60-90 days for contractors. Our payment systems are based and set up that way.”
• “Our industry is old school.”
• “It could move things a bit quicker.”

About half the respondents still used check-based payments and the change was seen as too overwhelming to consider in the near future. Checks and wire transfers were seen as reliable and created a paper trail that businesses were comfortable with and did not feel that mobile payments exhibited these characteristics currently. There is no need currently seen for change in these systems by their companies and therefore was not under consideration by any of the respondent’s current organizations. This was consistent across industries.

• “There is no paper trail for upper management to track. Accounting wise it’s a lot easier to trace your payments via a bank account.”
• “Some of the older guys would not understand. They still enjoy getting a check in hand. The concept of a digital payment would make their head explode.”
• “We always get a check mailed to us or we pick it up ourselves.”
• “Everyone sends checks.”

Mobile payment systems were seen by upper level managers as an all or nothing decision. There was no discussion about the integration of the technology with the current payment systems that were in place, but rather only as a complete replacement to their current systems. This was an interesting finding in that this could be seen as a larger barrier to adoption than previously thought. If adoption is seen as a complete replacement and overhaul of the payment systems, and these systems have been in place and successful for a long period of time, the overwhelming sense that it would all need replacement and upgrading could be what is facilitating businesses in their lack of desire to even explore the mobile payment option in their organization. As one participant stated, “The technology is there, but it has to do with how badly businesses want to change their payment structure.”

Security systems were still not seen as satisfactory for B2B mobile payments. This was mentioned specifically for a manager who has large payments. While they stated that it might be an option for smaller payments, the risks involved for higher transactions at this time were seen as a problem for its implementation. Several other respondents mentioned that there were trust and security issues that would need to be sufficiently addressed before adoption was even considered in their organization. If the payments could be secure and immediate, it would make adoption more
likely and for some respondents, preferred in their payment cycle, which is usually long and they would be able to understand their cash flow better.

- “I think the biggest con would be security. I think you would be a little concerned about that.”
- “I think the mobile payments are fine for smaller payments, but larger payments have a lot of internal controls to buy a piece of equipment.”
- “I think it is still so new. So, there is that apprehension. Is it safe? Is it secure?”
- “All of our payroll is in house. Nothing goes out. Nothing is online. It is just a security feature. Nobody can hack our system because nothing is online.”

Benefits of mobile payment adoption. It will not affect current cost controls in the organization. Managers viewed the mobile payment structure similar to credit cards. Employees have a set budget and limit that they can spend without approval and that would not be seen as any different if integrated into mobile payments. With these controls in place, organizations could still track and manage costs in similar ways that they currently do and so most respondents saw no impact maintaining cost controls. The ability to streamline the process was seen as a way to continue to control costs with mobile payments as well.

- “I don’t think that it will because it is pretty easy to set limits on purchases that are authorized and/or up to a certain amount.”
- “I don’t think it would affect that primarily because managers would use that just like a corporate credit card now. I mean most of them have a credit limit or restrictions of stuff that you can buy.”
- “Managers all have a monthly limit that they cannot go over.”

Efficiency and convenience were the most common benefits discussed by the respondents, in the case that mobile payments became a possibility for their organization. As stated above, on a personal level and with consumers, managers saw the portability and convenience of using mobile payments, so it would be a natural step in the process of B2B transactions. Its adoption in the B2B environment was not seen as mainstream and was a deterrent, but all respondents realized that it would make their jobs and the organization’s payment structures easier if they were adopted. One respondent mentioned that they spend so much time on the job, it would be a lot easier to take out your phone and quickly place an order, cutting this part of his role’s time during the day that could be spend on other functions.

Some respondents were also looking for their business customers to ask for the technology to make or take payments from their organization as a matter of maintaining satisfaction. There is almost a reverse adoption occurring. If clients ask for the technology, they are willing to explore or invest, but not until that point in time. Several respondents spoke about the changing of behavior using technology of new managers and that they will be the ones to drive the change since that is
what they are accustomed to using. They agreed it would take some major shift in behavior of managers or clients in their opinion to start the process.

- “The only situation that I would consider using a digital exchange of money is if someone in the industry would prefer it that way.”
- “There is one new supplier who tries new things and might be open to try it.”
- “I think that as the workforce becomes more tech savvy, it will come more commonplace.”
- “I think that as the older generation of business owners retire, the next generation will be more open and accepting of mobile payments.”

Adoption in the future. Managers understood that mobile payments are the future and will be ready to integrate when it becomes the norm. While they could see the advantages, they were not ready to adopt. Some respondents stated that they thought they had vendors ready to test the process, or that “younger” businesses would come in and be more trusting of the process, which would push organizations to adopt the systems at some point in time.

- “I’m all for it! I think that it is coming in the future. It will have the ability to make things more efficient and I love that.”
- “I wouldn’t have a problem using it.”
- “I think if businesses integrate this into their organization, they will really like the results because it’s really fast and convenient to use.”
- “I mean half the time you don’t have a spare five minutes to yourself so it would definitely be easier. You just pull out your phone and order real quick.”

No matter the rate of adoption, mobile technology could be implemented quicker if it was marketed as being more efficient and effective than current payment methods. As best summed by one participant: “It is about getting the job finished as quickly as possible and I have no preference for how it gets done.”

DISCUSSION

While managers can see the advantages perceived by the use of mobile payments in their B2B structures, participants in the study highlighted that transferring from the B2C environment, although highly recognized and used, would not be straightforward and have several barriers exists in their adoption. Barriers that were identified by the respondents included the notion that upper management was resistant to the change, the change was seen as an all or nothing decision, and that the change was too overwhelming for consideration. Even though the technology of using mobile payments was an easy change considering the pervasive use of mobile devices, it was the revamping of the systems that were in place that was identified as the barrier. Although not stated,
it was implied that current payment systems are cumbersome, filled with duplication, and subject to many software bugs that add frustration rather than efficiency. As a result, to increase the use and implementation of new technology, businesses should focus on the product’s convenience and ease of use as a probability gauge of whether the organization will accept the new technology.

Managers want efficiency. Any device or process that adds to their efficiency will be welcomed. The catalyst in the near term for organizational efficiency is the federal government’s quest for instant payments processing. This will be possible due to infrastructure development of 5G from Internet Service Providers throughout 2021 and beyond. As a result, the addition of mobile payments to business software could increase productivity and profitability of most B2B corporations.

The participants agreed that small mobile payments for a business would be acceptable. Most of the participants do not believe that authorizing mobile payments for business applications would affect current cost controls in place. This finding is significant because it is believed that people spend more money while using mobile devices than when they are not on mobile devices. This is also significant for the future purchase of capital expenditures. The participants recommended that bureaucratic oversight of large multimillion-dollar capital expenditures should continue. It is undetermined if electronic cost controls will be able to replace human judgement and intuition. This is a significant barrier for developers of software to attempt to overcome in the development of business mobile payment software. If a company is able to create an automated, consistent, user friendly, mobile payment system then organizations have the opportunity to eliminate excess human capital for massive cost savings.

Managers believe that current cost controls are sufficient. They belief that mobile payment oversight should be similar to organizational limitations placed on company credit cards for smaller purchases. They do not believe that by allowing mobile payments, excess employee spending will take place. They are also against the use of mobile payments for capital expenditures. They believe that human oversight is still required for major purchases.

The important point made by the participants is that the convenience of the mobile device combined with the ease of use of the technology is what is driving the increase in mobile payments in the retail sector. The participants believed that it is possible for someone to develop a software that will transfer this capability onto a B2B platform. The results from these interviews are consistent with the existing literature on the adoption of mobile payments. If top executives attempt to implement a new technology into their business. The technology must have both the convenience and easy to use features available in order to make a successful implementation of new business software.

Limitations

Whenever a qualitative approach is undertaken to provide a framework to build upon from a small sample, limitations can influence projection to a larger sample. Respondents were selected based on their knowledge of mobile payment systems and adoption likelihood in their organization, as well as their management status, but were not consistent across an industry
category. Therefore, results cannot be generalized to a specific B2B industry. None of the managers mentioned that a mobile system was being considered or researched at the time of the interviews for their internal payments, so motivations for actual adoption were not able to be analyzed from the data.

**Future Research**

The data for this study was exclusively based off one-on-one interviews. The goal was to gain deep insights into the adoption of mobile technology in the B2B environment from managers that would be able to implement these technologies in the future. Firsthand knowledge was seen as a critical link in building a framework so the interview method was identified as the best methodology. Subsequent research can utilize the data through more quantitative testing and development of a conceptual model. Additional research may also focus on specific industries, managerial level, or size of company to get more detail on the likelihood of adoption that is more focused than these generalized results.

In addition to major themes, the data collected from the interviews can also be used in an assessment of whether an organization should implement new technology. The manager capability requirements of convenience and ease of use are tenets that should be applied to every prospective new technology platform. By adding these considerations, organizations will save time and money by purchasing software that will be used by its employees. These areas are also common in the adoption of technology research and will be used as guidance for future research in this area. The exploratory nature of the qualitative research methodology allowed for a potential framework to be developed and when used in conjunction with established models, even though most are used in the B2C context, further empirical studies based on quantitative data will identify the strengths and assist in confirm of these factors as they are relative to the B2B environment.

**REFERENCES**


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