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Enterprise App Adoption

An investigation of the key factors that affect the adoption of mobile apps by Commercial Bankers at a financial services organisation

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Executive Summary

The purpose of this study is to examine the key factors that affect the adoption of mobile enterprise applications by Commercial Bankers.

A review of technology acceptance literature relating to mobile apps for employees found that there was a lack of qualitative studies in this area.

A phenomenological approach was used for this qualitative research. Ten semi-structured interviews were conducted to deeply explore the participants' point of view, feelings and perspectives about mobile apps.

The findings of the interviews confirmed three key advantages to using mobile apps as part of the participant's employment: time saving, better customer conversations and faster decision-making. The data analysis isolated five key barriers: poor quality data, perceived value, ease of use, reduced customer understanding and mobile devices characteristics.

Organisations wishing to speed the adoption of mobile apps by their employees should evaluate the importance and significance of these five identified barriers to adoption, and plan how to overcome them.

Introduction

The purpose of this study is to examine the key factors that affect the adoption of mobile enterprise applications (**mobile apps**) by Commercial Bankers.

The rise in use of mobile apps has already happened in our personal lives and we have embraced this rapidly evolving technology. Now an increasing number of organisations are focusing internally; developing mobile enterprise apps as part of their core business strategy to remain competitive and streamline inefficient business processes (Apperian, 2015).

The benefits of mobile apps for employees can be quantified in terms of operational efficiency, increased employee productivity and speed to acquire business critical information. The technology to import large amounts of information that is instantly translated into meaningful insights is now available and provides a compelling competitive advantage. To have this functionally at the fingertips of employees increases this advantage even more. As a result, investment into mobile apps will continue to grow at an increased rate (Gartner, 2015).

A lesson learnt from early innovators has been that a successful mobile app strategy begins with app development, but focuses on driving app usage and adoption. The return on investment in mobile apps will not be realized if what you build is not used. Successfully managing the deployment of mobile apps and ensuring that these apps meet business objectives is becoming ever more complex and challenging.

We know that not everyone immediately adopts a disruptive idea despite obvious benefits. We also know that people will approach new innovations in different ways. Rogers famously identified five personality traits in his landmark study the *Diffusion of Innovations* that help us organize how people will accept a new innovation: Innovators (2.5%), Early Adopters (13.5%), Early Majority (34%), Late Majority (34%), Laggards (16%) (Rogers, 1962, pp.282-3).

Shortening the timeframe associated with this bell-curve of adoption is important if organisations want to maximize the benefits associated with information technology (**IT**) innovations. It is also increasing the demand for studies that identify the drivers and barriers, explore the influences and examined key processes and stages associated with the adoption of IT innovations.

Literature and theoretical background

Technology Acceptance Theories

This section reviews the most applied theories predicting user acceptance of mobile technology.

The **Technology Acceptance Model (TAM)** (Davis, 1989) is one of the most widely used theories to explain how users come to accept and use an information technology. The TAM derived from an extension of the Theory of Reasoned Action (**TRA**) (Fishbein and Ajzen, 1975) and the Theory of Planned Behaviour (**TPB**) (Ajzen, 1991).

The TAM suggests that perceived usefulness and perceived ease of use are the most important factors that influence a person's intention to use an information technology. These factors are the most commonly used in studies of technology acceptance (Sanakulov and Karjaluoto, 2015) and should be explained in detail.

Perceived usefulness is defined as "*the degree to which a person believes that using a particular system would enhance his or her job performance*" (Davis, 1989, p.320). Perceived ease of use is defined as "*the degree to which a person believes that using a particular system would be free from effort*" (Davis, 1989, p.320). Davis found that perceived usefulness is the strongest predictor of an individual's intention to use an information technology.

The TAM has been widely criticised despite its frequent use. Limitations of the TAM include an inability to account for irrational, impulsive or habitual behaviour or mandatory situations (Hale et al., 2002). The TAM also excludes an individual's

goals or a choice between alternatives that may influence their intention to use an information technology (Hale et al., 2002).

As a result of various limitations, researchers have extended the TAM. TAM2 (Venkatesh and Davis, 2000) added social influences (subjective norms, voluntariness and image) and cognitive instrumental processes (job relevance, output quality result demonstrability). TAM3 (Venkatesh and Bala, 2008) included the influence of trust and perceived risk on system use.

This piecemeal improvement of technology acceptance theory led to an excess of theories to satisfy constantly changing IT environments (Bagozzi, 2007). In an attempt to integrate the main competing user acceptance models, Venkatesh et al. (2003) formulated the **Unified Theory of Acceptance and Use of Technology (UTAUT)**, a consolidation of eight models (Theory of Reasoned Action, Technology Acceptance Model, Motivational Model, Theory of Planned Behavior, a combined Theory of Planned Behavior and the Technology Acceptance Model, Model of Personal Computer Use, Diffusion of Innovations theory, and Social Cognitive Theory). This model was found to outperform each of the individual models (Venkatesh et al., 2003). The UTAUT aims to explain user intentions to use an IT system and subsequent usage behaviour. The UTAUT model promotes four key elements: performance expectancy, effort expectancy, social influence, and facilitating conditions. The key moderators include gender, age, experience, and voluntariness of use.

A recent review of 174 studies that applied the UTAUT from 2004 to June 2011 found that it been used to examine the adoption intentions of general-purpose systems and specialised business systems (Williams et al., 2009). The analysis of the various studies showed that only 25 studies focused on communication systems with a mobile element. There were four studies concerning mobile banking services, but all four related to customer adoption only. The studies that were employee focused did not have a mobile element and were conducted with employees from the government, healthcare and education sectors.

No relevant studies relating to UTAUT and technology adoption by banking employees were found using the same methodology as the Williams et al. 2009 review for studies published between 2011 to July 2015. There appears to be a gap in the literature to apply the UTAUT in the context of adoption of mobile banking applications by bank employees.

The **Technology Organisation and Environment (TOE)** (Tomatzky and Fleischer, 1990) theory is a useful theory connecting the organisation's context and resulting culture as an influence of adoption. This concept will also be important in determining the relevance of any findings to other organisations or industries.

The financial services sector has an interesting profile in terms of regulatory compliance, risk management, customer experience and information volumes. However, the biggest barrier to mobilising the sector are legacy IT systems (Mubaloo, 2015b). These factors will influence an individual's intention under a possible combined UTAUT and TOE model.

The TOE describes factors that influence technology adoption at the enterprise level. The TOE suggests that technology adoption in firms is influenced by three categories. The technological context includes the internal and external technologies that are relevant to the firm. The organisational context including the firm's size, degree of centralization, degree of formalization, managerial structure, human resources, amount of slack resources, and linkages among employees. The environmental context includes the size and structure of the industry, the firm's competitors, the macroeconomic context, and the regulatory environment.

Relevant Studies

This section explores several relevant studies, including literature reviews of mobile technology adoption and studies from an employee perspective.

Literature reviews

Sanakulov and Karjaluoto (2015) reviewed 67 studies on consumer adoption of mobile technologies between 2005 and 2013. The results showed that most studies

are quantitative and come from Asia. The TAM is the most used theory. Sanakulov and Karjaluoto (2015) recommended that future research use qualitative methods and examine the behavioural outcomes of mobile adoption instead of simply adoption in consumer markets.

Basole et al. (2013) reviewed 472 studies on enterprise adoption of IT innovation between 1977 and 2008. The results showed that in early studies more emphasis was placed on firm characteristics than external characteristics. More recent studies have found that top management support, trust, infrastructure and integration have become more prominent determinants in enterprise adoption of IT. The two dominant research methods were frameworks/models and surveys, and mathematically modeling, interviews and case studies.

Basole et al. (2013) stated that the majority of research focused on well-established enterprises and well understood innovations. Bascole et al. (2013) suggests that future research into emerging IT innovation, such as mobile/wireless technologies would provide additional insights into how organisations manage risk, uncertainly and make cost-benefit tradeoffs.

Employee perspectives

It has been difficult to find studies involving technology adoption by employees of financial services organisations. Murari and Tater (2014) conducted a study of employee's attitude toward adoption of IT-based banking services at four private banks in India. This study supports the view that employees believe IT leads to increased customer satisfaction, improved operational efficiency and reduced transaction time. However, this study focuses on employee perception of IT generally and provides little support to a study on enterprise app adoption.

Velga et al. (2014) analysed time-lagged survey information from 153 financial analyses, required to adopt a new software application at a multinational bank. Velga et al. (2014) focused their adoption study on "proficient use." The study found that users that held strong pre-adoption expectations and were motivated to integrate the new software into their work routine, achieved higher levels of proficiency.

Both the Murari and Tater (2014) and Velga et al. (2014) studies add limited value in understanding a broad range of factors affecting enterprise app adoption.

A study conducted by Sinisalo et al. (2015) exploring the barriers to the use of mobile sales force automation (**SFR**) systems from a salesperson's perspective provides a useful comparison to a proposed study of mobile app adoption by Commercial Bankers. This study used 10 semi-structured interviews with directors and sales managers to analyze the main barriers to SFR system adoption. This is an interesting study that distinguishes the TAM and UTAUT as overused in studies relating to sales force automation. Instead, Sinisalo et al. (2015) proposes three functions that may hinder the sales function: customer knowledge, characteristics of mobile devices and information quality.

White Papers

Enterprise app adoption is a topic of interest to researchers and practitioners. A number of white papers, reports and e-guides on enterprise app adoption are available online. These resources support the view that enterprise mobility is, or should be, a priority for organisations. According to a recent study of 300 UK IT professionals, 47% indicated that their organisations were investing in apps that support core business processes to increase adoption and 67% of respondents cited security as the top challenge to achieving their mobility goals, followed by the ability to determine return on investment (32%) and a lack of budget (29%) (Apperian, 2015).

A white paper produced by Mubaloo (2015b) suggests that mobile apps for banking employees could include five key use cases: undertaking address and credit checks (Acquisition), activating a new product accounts (Onboarding), enabling straight through processing (Engagement), enabling the movement of money reducing wait times (Transacting) and educating and cross/up sell (Marketing).

The use of tablets (including iPads), in particular, will allow employees to become more mobile, proactive and engaging with customers. According to Strategy& (2012), tablets will need to solve five distinct problems that no model has yet to address. First, users expect their mobile devises to sync seamlessly with their

personal information. Second, the critical mass of apps and services must exist before launch. Third, can sufficient security be applied to protect important business and customer information. Forth, the cost of providing and maintaining multiple devices (laptop, tablet and smartphone) is seen as a significant barrier for many organisations. Lastly, uninterrupted internet access cannot be guaranteed in many locations. A lack of internet coverage can result in both a poor user and customer experience, and provide a compelling reason not to integrate tablets into day-to-day activities.

Practitioner studies and information consistently advocates for a user centered design approach to mobile app development. The goal of user-centered design is to provide an easy to learn and use business relevant app (Apperian, 2014). Proactively focusing on perceived ease of use and perceived usefulness (TMA attributes) during the development process plays an important role in fostering or hindering app adoption. A clear mobile app strategy is also promoted. A lack of a clear mobile app strategy can result in siloed app creation, no roadmap or funding for enhancements, security and other technical issues and high cost and log development times (Mubaloo, 2015a). Over time, these consequences can nurture a negative impression of mobile app development. Practitioner studies provide useful advice and strategies for facilitating mobile app adoption.

A review of technology acceptance literature relating to mobile apps finds that there is a gap in the current literature for a qualitative study into the key factors that affect the adoption of mobile enterprise apps by employees. A combined UTAUT and TOE model provides a useful starting point for a broader range of possible barriers to mobile app adoption. Consideration will be given to similar studies and factors highlighted in practitioner studies.

Research Methodology

The two dominant research methods used in studying technology innovation adoption are frameworks/models and surveys (including mathematically modeling), and interviews and case studies (Basole et al., 2013). The Basole et al. (2013) study found that laboratory and field tests were utilized the least and the distribution of research methodologies was consistent across disciplines. Sanakulov and Karjaluoto (2015) noted a possible gap in qualitative studies.

There are many different qualitative research methodologies, such as ethnography, phenomenology, grounded theory, life history and ethnomethodology (Basole et al., 2013). In this case, a phenomenological approach was used. Phenomenology is *"the study of lived, human phenomena within the everyday social contexts in which the phenomena occur from the perspective of those who experience them"* (Titchen and Hobson, 2005, p.121). A phenomenological approach focuses on exploring how human beings experience the phenomenon, in other words how they perceive it, describe it and make sense of it.

To deeply explore the participants' point of view, feelings and perspectives about mobile apps, ten semi-structured interviews were conducted. In phenomenological research data is commonly collected through face-to-face interviews to gain insights into the experiences of the participants. The interviews were time consuming. However, this approach allowed participants to talk about issues in detail. The interviews were not confined by predetermined questions, allowing me as the interviewer to probe areas based on the participant's responses (Bryman and Bell, 2011, p. 475).

This study focused on the perspective of sales and relationship management personnel, specifically Commercial Bankers. Commercial Bankers were targeted as their role was most likely to use and benefit from mobile apps within the particular organisation being studied. Access to Commercial Bankers from two Commercial Centres had been discussed with senior management. The choice of participants was based on a purposeful sampling technique, so that selection meets the needs of

the study (Bryman and Bell, 2011). This is an appropriate method to select the participants for a study using a descriptive phenomenological approach because the aim is to understand and describe a particular phenomenon from the perspective of those who are or have experienced it. The proposed participants had a minimum of five years sales experience. Despite their experience in sales, the participants had not used custom mobile apps for their work. However, they were experienced at using various business applications with a laptop and desktop PC. All participants have used mobile apps in their personal lives and will be proficient users of their personal mobile banking app. Accordingly, these interviews will provide valuable insights into the factors that affect the adoption of mobile apps by employees.

This study conducted a one-method sample, due to time constraints and limited access to participants. To gain a more accurate picture of the phenomenon in question, the use of more than one data collection strategy is often used in a phenomenological approach. Collecting data from multiple sources, known as triangulation, provides breadth and depth to a study by ensuring complete and thorough findings. Future research capturing data from additional sources could build on and validate the findings of this research.

Ten Commercial Bankers were identified from a total pool of twenty-four based on their willingness and availability to participate based on the proposed interview schedule. When scheduling the interview, a brief explanation of the problem and history of the study was given. This helped participants prepare mentally for the interview session and focus on the particular issue. During the interview participants were encouraged to discuss changes occurring within the field of Commercial Banking and the related technology. The participants were asked to discuss the advantages of and barriers to using mobile apps. An interview guide was used to allow for increased flexibility and freedom when exploring the research topic. Five topics were discussed during the interview: the key changes that have occurred in Commercial Banking over the past decade; the role that technology and systems have played in those changes; the functions mobile apps could perform in the future; the perceived key advantages to using mobile apps; and the perceived key barriers to using mobile apps. At the end of each interview the researcher reviewed the information provided by the participant. All interviews were recorded to ensure the

responses were captured accurately. The recordings were subsequently transcribed for analysis.

The data analysis followed the Miles and Huberman's (1994) framework, in which the researcher notes patterns and themes from the data, makes links with previous literature and theories (such as the UTAUT and TOE), and looks to identify new themes that can add to the existing knowledge. Participants were contacted by phone to clarify any additional questions that emerge following the transcription process. The participant confidentially has been maintained by using pseudonyms (CB1, CB2… etc.) to identify participants.

It was difficult to determine the number of interviews that would be needed to generate sufficient data. Ten interviews represented only 2.5% of the total Commercial Banker population within the organisation. However, face-to-face interviews provided a broad range of detailed information that certain quantitative alternates could not. There are consistent organisational and technology constraints and low job variability among the Commercial Bankers studied that supports the value of a small sample size. This study is also constrained to a maximum of ten interviews by access to the Commercial Bankers of two Commercial Centres only and a four-week time period in which to conduct the interviews.

Analysis

Before examining the advantages and barriers to using mobile apps, it is important to describe how the financial services industry and sales work has changed over the past decade.

Change in Financial Services

The past decade has been one of significant change in Financial Services. The growth of the superannuation sector, the impact of the Global Financial Crisis (**GFC**) and the subsequent wave of global re-regulation has had a profound effect on the structure of the financial sector and attitudes towards financial sector regulation.

While the GFC is considered “over”, the effects of sustained increased funding costs are still being felt. As a result, the global economic environment remains highly volatile. The European debt crisis, a slowdown in demand from China and concerns of a global downturn continue to affect market confidence in New Zealand and Australia.

Over the same period, banks have been a part of a significant change in customer behaviour. Digital banking has become the most significant way customers manage their finances and many countries are steadily moving closer towards becoming “cashless societies.” All participants described technology investment as something of an “arms race” for the big banks as they strive to keep pace with each other and with new FinTech entrants. FinTech refers to an economic industry composed of companies that use technology to make financial systems more efficient.

> “The Big Four [banks] are all investing in technology to address changing customer habits and to leverage insights from Big Data, especially customer and transaction data.” (CB9)

Many participants acknowledged that technology change has also led to banks needing fewer employees. However, there was concern among a few participants that the right balance needed to be struck between operational efficiency and the ability to maintain personal service to customers. Some participants commented that personal characteristics and interactive communication remains the core of selling. The role of mobile apps would be to support the selling process by making additional information instantly available. Although the motivation to use mobile apps in a sales environment will be different for each person, all participants agreed that developing the digital capabilities of relationship managers and empowering them to keep pace with customer evolutions was important.

Advantages to using mobile apps

The data analysis identified three key themes as the advantages to using mobile apps from the interview responses: time saving, better customer conversations and faster decision-making.

Time saving

Time saving refers to multiple productivity gains. Specific examples mentioned by the participants included: the time saved consolidating information from multiple systems; the ability to work anytime, anywhere; and the ability to perform analyses, automate reporting and to "take action" on information, such as approving business loans. Many participants saw that the key benefit of this time saving was less time in the office and more "customer facing time."

Better conversations

Many participants were excited by the prospect that mobile apps could display detailed customer information in a fun and interactive way. The view being that this type of functionality would enhance a customer conversation. However, a few participants commented that this perceived advantage could be "hit or miss" with some customers. All participants agreed that the information provided by mobile apps would provide useful back-pocket information to support a better customer conversation in any situation.

Faster decision-making

Providing detailed information with the ability to perform complex analysis creates a powerful capability. Many participants thought that the ability to streamline complex processes was critical. The ability to enable on the spot decision-making was seen as an important function that would empower them to use mobile apps.

Barriers to using mobile apps

The use of mobile apps is not without its drawbacks from a salespersons perspective. The drawbacks are not things that will prevent the use of mobile apps, but are considered barriers that can be overcome, some easily and some less easily. The data analysis isolated five key barriers: poor quality data, perceived value, ease of use, reduced customer understanding and mobile devices characteristics.

Poor quality data

Sophisticated mobile technologies enable salespeople to access information anytime, anywhere. All participants saw data accuracy as an essential element for mobile apps.

> "Any information we display in front of a customer must be 100% accurate. I would probably check it before a [customer] meeting. Information used to make a credit decision has to come from the right source system." (CB3)

Many participants commented that they would need to know, which system the information came from, how frequently the information was refreshed and understand the detail behind any calculations before they would use a new application. These participants stated that this was due to a number of systems sharing similar types of information, but data inconsistency and lack of integration between systems has led to manual intervention and workarounds. These responses are consistent with a general distrust of internal system information, which may cause slower technology adoption rates.

Perceived value

A mobile app needs to address a specific issue that makes an employee's life easier. Today's employees are spoiled by polished consumer apps and have high standards for quality and experience; they are often quick to dismiss apps that are not up to scratch. The results indicated that perceived value and satisfaction were important in determining an employee's intention to try a mobile app.

> "I think new technology needs to radically transform how we do business. Increment improvements are good, but most of us are expecting more. If you're overselling, don't bother. You're probably doing the wrong thing. It should sell itself." (CB7)

Many participants thought that new technologies should be proven in live situations before they are released to the broader workforce. Perceived value would be higher if they knew that their peers and customer's had tested a new application or process

as fit for purpose. A major benefit of getting a small number of business users involved from the beginning is the excitement and momentum of the app once it is available for everyone.

> "If pilot users enjoy the functionality of an app and start bragging about it, it will most likely be a hit with the rest of us." (CB1)

Reduces customer understanding

Technology development has led to a situation where employees have access to large amounts of customer information at their fingertips. In ideal circumstances, this means that salespeople have enhanced customer knowledge, can offer customers a more personalised service and generate a closer customer relationship. However, in this study many participants suggested the opposite. Increased use or overreliance on technology can reduce the levels of customer knowledge among salespeople. The following excerpt illustrates this situation.

> "In the past, you had to know your customers by heart. Now we have two or three times the number of customers. Mobile technology will help, but using banking apps with customers may give them the impression that we're just about the numbers and not interested in understanding them and their business." (CB3)

This comment indicates that the increasing use of technology may have negative consequences. Technology has enabled efficient time management, meaning that salespeople can manage more customer relationships simultaneously. However, a salesperson may have less time for personal contact with each customer. That reduction in personal service may lead to customers being known only as a number. Two participants went further suggesting that introducing a mobile device might create a general barrier to conversation and focus the discussion to only what was being shown onscreen.

Ease of use

Employees will not use an app that is too complex or full of bugs and using it is frustrating. Some participants felt that not enough time was spent on making sure systems were easy and efficient to use. All participants commented that any mobile app has to be easy and forgo "nice to have" functions in favor of simplicity and intuitiveness.

> "We don't have time for applications that take months to master! If there are too many steps to get to the key information I'll use something else." (CB6)

A mobile app needs to be simple, convenient and easy to use. Great care should be given to the design and workflow of a mobile app to ensure that it does not require much training to use straight away. It can be frustrating when there is a logical disconnect between an application and business processes. Rather than dealing with the frustration of a steep learning curve, people may default back to using what they know and are comfortable with in their legacy systems.

Mobile device characteristics

Mobile devices, especially tablets and smartphones, have certain distinguishing characteristics that determine the activities they are best suited for. Tablets and smartphones may not have the capability to run certain applications particularly those applications that have not been optimized for those devices.

> "It would be difficult to mobilize many of our current systems. Shrinking TLA [Origination System] or Optimist [Financial Modeling Tool] onto an iPad wouldn't work. I can barely read them on my monitor." (CB1)

Some participants thought that using smartphones to access or manipulate information was impractical. Many participants saw value in having access to information during a customer conversation, but said that the use of a laptop or tablet is preferable to smartphones for both salespeople and customers. Furthermore, participants felt that the use of mobile devices with customers should be confined to

very simple actions. Many participants added the majority of their current applications would need to be radically redesigned and enhanced if they were to be use outside of the current in-office way of working.

Discussion

The purpose of this study is to examine the key factors that affect the adoption of mobile apps by Commercial Bankers. The participants in this study saw three key advantages to using mobile apps: time saving, better customer conversations and faster decision-making. These perceived advantages of mobile apps for employees are consistent with current literature. The literature highlights operational efficiency, increased employee productivity and speed to acquire business critical information as the key benefits to using mobile apps.

The benefits of using mobile apps are clear, but adoption of this technology by Commercial Bankers has been slower than anticipated. Why? Distractions stemming from the GFC, as well as deployment challenges, have impeded many financial service organisations from fully embracing mobile technology. However, this situation is rapidly changing to meet new customer expectations and shifts in the competitive landscape that are reshaping the financial services industry. This capability is also critical for responding to new competitors, such as FinTechs.

Mobile technology offers an obvious solution. In particular, tablets and the powerful mobile apps that run on them, empower Commercial Bankers to provide superior service and engage with clients at a deeper level, strengthening relationships as a result. Mobile apps deliver benefits as they allow Commercial Bankers to tap into multiple information flows and give them access to the very latest data. Not to mention the capability to perform analyses, run reports and to take action on information, such as approving new or amending existing products. These capabilities allow Commercial Bankers to add value by being responsive to client needs on the spot and this responsiveness is expected. Customers who use tablets themselves expect their Bankers to keep up with the times and will have little patience for those who rely on printouts or outdated laptops. Tablets are always on,

easy to pass around a conference table, and the apps generally do not require training to use, making user manuals and hours of training superfluous.

The TOE describes factors that influence technology adoption at the enterprise level and is useful in identifying this particular user group as “primed for change.” In this study, participants agreed with and understood the need for change. They were well informed of the current technology challenges facing their organisation and industry and were knowledgeable about the technology used by their competitors. In the financial services industry competitors routinely leapfrog each other when it comes to new technology. The major financial service organisations have large investment strategies that mean that most technology advancements can be implemented and copied relatively quickly.

This study identified five key barriers to employees using mobile apps. Firstly, the quality of information may be poor, highlighting a distrust of internal system information. If the employees cannot trust the information they are provided, they will not use the apps when working with customers.

Second, a mobile app needs to address a specific issue that makes an employee’s life easier. If the app does not assist them in their day-to-day work the perceived value in using the app will be low and employees will avoid using the app unless it is a specific requirement of their role.

Third, mobile apps need to be simple, convenient and easy to use. Although this should be evident, many apps are complicated and not developed from the point of view of the end user. If the use of an app makes an employee’s job complicated adoption and use of the app will be low.

Fourth, increasing technology may have negative consequences for customer understanding. For example, if a Commercial Banker is relying on information provided to them in a mobile app as opposed to talking with the customer sitting in front of them, they may miss information important to understanding the transaction being undertaken.

Finally, the barrier may also relate to the mobile device characteristics as opposed to the use of the mobile app itself. If the tablet or smartphone used does not have the capability to run certain applications then the mobile app may not work as intended and the ease of use or the reliability of the information provided from the mobile app may be compromised. In addition, if the mobile app is designed to be used on a particular mobile device but is used on an alternative device, the app may not work as intended. For example, a mobile app designed to be used on a tablet will have a specific resolution that fits a tablet, if it is "shrunk" to be used on a smartphone the data seen on the screen may be difficult to read and hard to navigate.

Perceived value and ease of use are key elements of the TAM and UTAUT models. The UTAUT promotes four key elements: performance expectancy, effort expectancy, social influence and facilitating conditions. The findings of the participant interviews support these elements. The participants interviewed in this study indicated that they would be influenced by the performance of a "pilot" and examples of a mobile app being used successfully by their peers; this supports the social influence element.

It could also be argued that the characteristics of a mobile device was a facilitating factor. It is important to acknowledge that mobile devices such as laptops, tablets and smartphones, have unique characteristics. Therefore, mobile app developers should focus on developing mobile apps that can take advantage of the different characteristics of each device. Furthermore, a mobile app should be customised for the specific mobile device it is to be used on.

The presumption that the information may be inaccurate and an apprehension that new technology could have negative consequences for customer understanding are new factors to be considered. Distrust in internal systems could be a specific organisation issue. However, a belief that technology could reduce customer understanding is one that could be overcome more quickly, given the alternative view that mobile apps would present significant time savings and enhance customer conversations. This suggests that an inability to use mobile apps stems from either a lack of commitment by the sales force to use them or a lack of training and understanding on how to best incorporate them into customer conversations and

their current way of working.

Customers have become more technologically savvy and aware. Their expectation of service levels and speed of information are increasing and may even outpace a salesperson's ability to provide such services, leading to tension in the relationship. It is important that any future change management plans address any data quality concerns and how Commercial Bankers could include a mobile device in a customer conversation. Future training plans will be more compelling if they include live examples and experiences from their peers.

From a managerial perspective, the use of mobile devices will make an important contribution to the work of sales personnel. For a senior manager, a mobile app used appropriately by their sales people can also provide an efficient tool for monitoring sales performance. If the sales people use mobile devices, not just for information retrieval but also for sharing information, their performance will be more transparent and the devices can enable faster responses by a senior manager to possible deficiencies.

While the development of mobile apps will have a significant impact on the sales practice of Commercial Bankers, the results of this study suggest there is still significant room for further research.

Recommendations

With respect to the study's limitations, research in the factors that affect the adoption of mobile apps by employees is limited. The results of this study are difficult to generalize. The data for this study consisted of ten interviews from one company.

Future studies should collect a wider data set to test the findings of this study. Additionally, further research should be conducted, seeking the perspectives of employees other than salespeople, on the adoption and utilization of mobile apps in organisations. Key findings could be validated in future by conducting more interviews or undertaking additional research using alternative methodology.

Remote working arrangements are becoming increasingly common. In addition to highlighting the issues relating to mobile apps or the use of a mobile app by employees, this study acts as a reminder that not all employees know exactly how mobile apps can support their working efficiency. If they did employees could work productively outside of the office and make their working arrangements more flexible. In future studies, these features of mobile working and their specific applications should be examined in greater detail and would offer an interesting line of research.

Conclusion

The purpose of this study was to examine the key factors that affect the adoption of mobile apps by Commercial Bankers.

The findings of ten semi-structured interviews confirmed three key advantages to using mobile apps as part of the participant's employment: time saving, better customer conversations and faster decision-making. The data analysis isolated five key barriers: poor quality data, perceived value, ease of use, reduced customer understanding and mobile devices characteristics.

Perceived value and ease of use are factors consistent with the TAM and UTAUT models of technology adoption. The presumption that the information may be inaccurate and an apprehension that new technology could have negative consequences for customer understanding were new factors to be considered. It is also important to acknowledge that mobile devices such as laptops, tablets and smartphones, have unique characteristics. Therefore, the mobile app developers should focus on developing mobile apps that can take advantage of the different characteristics of each device.

Organisations wishing to speed the adoption of mobile apps by their employees should evaluate the importance and significance of the five identified barriers to adoption, and plan how to overcome them.

This research has informed a change management plan for the deployment of a mobile app within the organisation. The successful deployment of the mobile app in early 2016, using strategies that have addressed the findings of this research will provide credibility to this study.

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