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**Effect of Cloud Computing Technology on Customer
Relationship Management in United Amara Bank**

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**“Effect of Cloud Computing Technology on Customer
Relationship Management in United Amara Bank”**

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ABSTRACT

This study intended to identify the effectiveness of cloud computing technology on customer relationship management in United Amara Bank. This study focus on the selected employees of the ICT department in UAB bank. In order to fulfill the research objects, both primary and secondary data are used in this study. For this study, the primary data has got from the survey, questionnaires, and interviews from the respondents by using the quota sampling method from the selected department. For the secondary data, the study scrutinizes and analyzes the benefits of cloud computing and the effect of customer relationship management of the United Amara Bank, including its challenges and opportunities for the future. The study considered cloud computing power, cloud computing security, lack of dependency on device and location and decreased dependency on hardware data as the independent variables for the adopting of cloud computing technology practices and the effect on the dependent variable of customer relationship management in UAB bank. The study found that the three variables except for the lack of dependency on device and location significantly affected the customer relation management of UAB bank. Finally, it is concluded the banks should use the could computing technology for better customer relationship management with clients.

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CHAPTER 1

INTRODUCTION

Cloud computing refers to the offering of dynamically provisioned computing services comprising of a mix of application platforms and or hardware capacity to users through a network of geographically disbursed systems. The service is typically offered through geographically disbursed and large data centers based on well-defined service level agreements. Given that firms are adopting this technology due to the benefits it provides such as cost savings, reliability, and scalability, the objectives of the study were to establish the extent of cloud computing adoption in the United Amara Bank, its benefits, challenges, and opportunities.

Cloud computing has numerous benefits. Making use of cloud computing correctly in a business can not only increase profits for a bank by allowing fewer employees to work remotely, but it can also increase the productivity of a bank. Employees no longer require to wait for its members to gather to work on a single project, rather they can commute to the cloud via the Internet to work from wherever, while still remaining up to date with their project partners. As more and more banks turn to cloud computing to save money and to increase business value, the future of cloud computing becomes more uncertain. It is uncertain how cloud computing service providers will react to their competition. What seems to be certain is that the popularity and user ability of these services will only continue to increase, especially while companies are continually forces to adjust to decreased budgets, layoffs, and a struggling economy. Cloud computing provided its customers the services it needs to be successful, innovative, and in step with their competition. Many researchers indicate that the cloud-computing will be next-big-thing in IT. If this is the case be expected to read more about the development of cloud solutions in the technology-intensive banking industry. However, hardly any documented cases of Cloud computing use in Myanmar banks are published to date. Therefore, this research has been set up to get deeper insights into the decision process which leads towards the adoption of cloud-services.

On the other point of view, customer relation management (CRM) includes instructions, methods, processes, and strategies that enable the organization to unify customer interactions and record all information. In this regard, some technologies have been used to absorb new profitable customers and maintain and enhance the

relationship with existing customers (Abeer Khan, 2012). The managerial value of CRM is in creating relationships with customers and their loyalty, although its basis is grounded on the technological dimensions. The concept of CRM means: adding value to customers by enhancing their satisfaction level in interactions with the organization. Moreover, customer relationship management is a business strategy for creating a mutual value that identifies all aspects of customer's characteristics, creates customer knowledge, forms relationships with customers and causes their interpretation on the organization's goods and services. Therefore, the evaluation of such an important concept is essential in banks because the basis of their functions is grounded on customers. CRM is one of the forerunners of cloud technologies and remains one of the great success stories in the space and itself has been dramatically changed as it has passed from an on-network led market, to the verge of being dominated by cloud offerings.

Customer Relationship Management (CRM) is a systematic way that is considered to help companies to develop and manage their relationship with the customer in a structural way. The new model is called "e-CRM" that customers are able to access to applications throughout the Internet. In a traditional CRM based system, the relationship was face-to-face or phone contact, but by the advent of the Internet, the majority of the CRM application had moved online, in order to meet the customer needs. As the organizations are investing a lot of money to implement CRM or other information systems, the emergence of cloud applications such as SaaS, can have a huge impact on this application. Recently, with the cloud computing concept, CRM system are used Software as a service (SaaS) platform. Hence, Cloud computing was adapted to develop and achieve a CRM system to migrate from traditional systems to software as a service SaaS, which has an influence in the cost and implementation of CRM. Now SaaS is the platform that offers common delivery model as a basic technology to deliver services to clients. According to SaaS is the delivery model that makes available and provide easy access to clients by subscription-based model through the Internet. The SaaS model meets the information management of the organizations absolutely inside the organization who are using this application. Though, SaaS can be suitable for both small and medium-size organizations.

1.1 Rationale of the Study

Banks around the world are struggling to deliver more efficient and effective public services in order to meet the increasing demands and expectations of citizens. The emergence of cloud computing technology has opened up new possibilities for many banks. In reality, cloud computing is one of the latest IT innovation phenomena that has risen from the idea of sharing, consolidating, and standardizing resources in a centralized infrastructure and facility. This concept presents many advantages such as cost reduction in both hardware and software investment for the organization. Cloud computing technology is now of significant relevance for many different domains of banks and there are well-known examples of its uses in enabling the idea of connected industry.

In the literature, the numbers of studies emerging on the factors that influence the adoption of cloud computing on various private sector domains ranging from large organizations to small-medium businesses are increasing. In addition, cloud computing is an innovative IT solution used to operate business applications over Internet technology, just like online banking, electronic commerce, electronic agent banking, mobile banking ..

The cloud computing environment is about not having any more expensive, capital- intensive hardware and infrastructure, and time-consuming, staff-intensive upgrades (Buyya et al., 2011; Buyya et al., 2009; Dhar, 2012).Its exclusive feature enables organizations' finance, human resources, sales, or service applications through a web browser.In the literature, the definition of cloud computing varies across fields of study in business and technical domains (Buyya et al., 2011; Buyya et al., 2009; Dhar, 2012; Mirashe and Kalyankar , 2010)

Moreover, cloud computing is defined as a model for providing on-demand access to computing services via the Internet. The services offered by cloud computing include infrastructure as a service (data-center and server facilities), platform as a service (operating systems), and application as a service (business packages, e.g. Enterprise Resource Planning, Accounting Systems Planning, and Microsoft Office package). Internet technology is the medium used as the transport mechanism between the client and the services (servers or applications) located anywhere in cyberspace, as compared to having this service residing on an “on-premise” computer. Another literature defines cloud computing as a means of renting IT infrastructure such as computers, storage, and network capacity on an hourly basis

from an organization that has these resources and services in its own data center and is able to make them available to organizations and customers via the Internet (Issa et al., 2010). This style of computing is where massive, scalable IT-related capabilities are provided as a service across the Internet to multiple external customers. This solution can be interpreted as the illusion of infinite computing resources available on-demand, the elimination of top-front commitments by cloud users, and the ability to pay for the use of cloud computing resources on a short-term basis as needed (Buyya et al., 2011).

On another approach, customer relationship management (CRM) is a way to manage a company's interaction with current and potential customers. It used data analysis about customers' history with a company to improve business relationships with customers, specifically focusing on customer retention and ultimately driving sales growth. In detailed, one important aspect of the CRM approach is the systems of CRM that compile data from a range of different communication channels, including a company's website, telephone, e-mail, live chat, marketing information and more recently, social media. CRM approach and the systems used to facilitate it, businesses find out more about their target audiences and how to best cater to their needs. Moreover, the primary goal of customer relationship management systems is to integrate and automate sales, marketing, and customer support. Therefore, these systems typically have a dashboard that provides an overall view of the three functions on a single customer view, a single page for each customer that a company may have. The dashboard may offer client information, past sales, previous marketing efforts, and more, summarizing all of the relationships between the customer and the firm.

In the context of the Myanmar Banking Industry, cloud computing on customer relationships is a new concept and to benefit from cloud computing assimilation, it will require a lot of success factors researched before it can be accepted and adopted. The fact is that the present ICT systems and infrastructures work wonderfully well on a stand-alone and silo basis for Myanmar Banking Sector. The adoption of new technologies requires some legacy systems in the public sector to be replaced while new systems and the existing compatible systems need to be integrated.

Therefore, this study is concerned with identifying the important factors that are hindering the adoption of cloud computing technology on customer relationship

management in the Myanmar Banking Industry and a case study of United Amara Bank (UAB) and about deriving an integrated information system theory model that can be used by other organizations. Thus, the central aim of this study is to identify and examine the determinants of cloud computing characteristics in the adoption of cloud-based services in the United Amara Bank (UAB). This study aims to contribute to the emerging field, specifically by focusing on the following research question: “What are the effects of cloud computing technology on Customer Relationship Management (CRM) in UAB?”

1.2 Objectives of the Study

The overall objectives of the study were to investigate the effect of cloud computing technology on customer relationship management in UAB while specific objectives include the following:

1. To identify cloud computing technology practices of UAB and
2. To analyze the effect of cloud computing technology on Customer Relationship Management (CRM) .

1.3 Scope and Method of the Study

This study examined on the effect of cloud computing technology on customer relationship management in United Amara Bank (UAB). The study focused on Head Office of United Amara Bank (UAB) and study from ICT Department who have the responsibility of manage for cloud computing system. The research through the survey method that is an attempt to collect data from members of a population in order to determine the current status of that population with respect to one or more variables. A survey was chosen because it seeks to obtain information that describes existing phenomena by asking individuals about their perceptions, attitudes, behaviors or values.

The study uses descriptive research method, both primary and secondary data are used in this study. (30) out of (50) management level staff and (100) of the ICT employee who have been working in Head Office of the bank are used as sample. Primary data were be collected through observation, interview and questioner methods. Secondary data and information were be collected from the UAB, relevant books, references, previous thesis papers and other internet websites.

1.4 Organization of the Study

This study is organized in combination of the five chapters. The chapter (1) introduces the rationales, objectives, methodology, scope and limitation of the study. The chapter (2) examines the theoretical background emphasizing on the cloud computing technology practices on customer relationship management and its impacts on the Banking Industry. The chapter (3) discusses the background history of the United Amara Bank relating to the extent of cloud computing technology adoption whereas the chapter (4) scrutinizes and analyzes on the benefits of cloud computing on customer relationship management of the United Amara Bank, including its challenges and opportunities for the future. The chapter (5) is the conclusion on the study on the wider view of findings, its suggestions, and the needs for further research.

CHAPTER II

THEORACTICAL BACKGROUND

Cloud computing is not a new technology, but it's a new method for providing computing resources and a model for offering services through the Internet. In fact, cloud computing provides the ability of productivity, saving information technology resources and increased computing power. Therefore, processing power will change to a tool that is always available.

Cloud computing distributes computing and processing duties among a network of resources that are composed of many computers. This function is in a way that user systems can access software and hardware services, processing power and storage space based on the demand. Offering cloud computing services by suppliers of these services for users is actually a pay-per-use service that will result in access to information technology resources shared through world wide networks such as the Internet and Intranet. These networks operate independently of the geographical place of providing services. The model of offering services in cloud computing is classified into four categories: (a) Software as a Service (SaaS),(b) Platform as a Service (PaaS), (C) Infrastructure as a Service (IaaS), and services (Lin & Lin & Chen, 2012). Each of these four categories offers different suggestions for different customers. However, they share a common business model and they allow their customers to use their computing resources (including services, applications, infrastructures, and platforms) (Sultan & Sultan, 2012). Therefore, this chapter presents the theoretical review focusing on the practices of cloud computing technology and its effect on customer relationship management of the bank.

2.1. Definition of Cloud Computing Technology

Cloud computing is a model for allowing agreeable, on-demand network access to a shared pool of configurable computing resources such as networks, servers, storage, applications, and services that can be rapidly provisioned and released with minimal management effort or service provider interaction (Mell & Grance, 2009). The cloud promotes availability through the following characteristics; On-demand self-service whereas customer can unilaterally provision computing capabilities, such as server time and network storage, as needed automatically without requiring human interaction with each of the service's provider; Broad Network

Access where capabilities are available over the network and accessed through standard mechanisms that promote use by heterogeneous thin or thick client platforms (e.g., mobile phones, laptops, and Tablet); Resource Pooling where the provider's computing resources are pooled to serve multiple consumers using a multi-tenant model, with different physical and virtual resources dynamically assigned and reassigned according to consumer demand (Mell & Grance, 2009). Cloud computing security increases as a result of centralized data and the existence of more complicated security resources but the concerns about the loss of control over sensitive data still remain. Computing power decreased costs of hardware purchase, decreased costs of repair and maintenance, and high flexibility of the system. The lack of dependency on device and location can access systems in every location and with every device (e.g. computer or mobile) that has a web browser and is connected to the Internet. The decreased dependency on hardware is that the users do no longer have to be limited to a specific network or computer. It is enough for users to change their computers to see that your applications and documents are still available for users on the cloud.

The term "cloud computing" is consisted of two words, i.e. "cloud" and "computing". Here, "cloud" refers to a network or a range of wide networks such as the Internet and a normal user is not precisely aware of behind the scenes and what happens consequently (such as inside the cloud). In some texts, the terms "cloud computation" or "cloud processing" have been used instead of the word "computing" (Merriam-Webster, 2011). Recently, cloud computing technology has been introduced as one of the most important debates related to the domain of information systems development (Lian et al, 2013), in a way that (Avram, 2014) considers cloud computing as a new paradigm for hosting and providing services on the Internet. Cloud computing has been recognized as an important domain in information technology innovation and it is a domain that extensive investments have been made in it (Armbrust et al, 2010). Some of the advantages of cloud computing include cost reduction (Jadeja & Modi, 2012), ease of scalability (Marston et al., (2011)), and easy management (Jadeja & Modi, 2012). The potential advantages of cloud computing application can be evaluated from two perspectives: financial saving and resource management (Lin & Chen, 2012).

2.2. Cloud Computing Technology Models

Cloud service models offer institutions the option to move from a capital-intensive approach to a more flexible business model that lowers operational costs. The key to success lies in selecting the right cloud services model to match business needs (Sriram, 2011). The various models for Cloud Computing Services operations and deployment include Software-as-a-Service (SaaS) in which a cloud service provider houses the business software and related data, and users access the software and data via their web browser. The consumer does not manage the underlying cloud infrastructure including network, servers, operating systems, storage, or even individual application capabilities, with the possible exception of limited user-specific application configuration settings (Christiansen, et al., 2010). Platform-as-a-Service (PaaS) where a cloud service provider offers a complete platform for application, interface, and database development, storage, and testing, this allows businesses to streamline the development, maintenance and provided to custom applications, reducing IT costs and minimizing the need for hardware, software, and hosting environments.

Infrastructure-as-a-Service (IaaS) where rather than purchasing servers, software, data center space or network equipment, this cloud model allows businesses to buy those resources as a fully outsourced service. The consumer does not manage or control the underlying cloud infrastructure but has control over operating systems, storage, deployed 14 applications, and possibly limited control of select networking components like host firewalls (Christiansen, et al., 2010).

There are three ways service providers most commonly deploy clouds, Private Clouds where the cloud infrastructure is operated solely for a specific company. It may be managed by the third party and may exist on or off the premises. This is very secure of all cloud options. The second model that can be utilized is Public Clouds where the cloud infrastructure is made available to the general public or a large industry group and is owned by an organization that sells cloud services and the third one is Hybrid Clouds where the cloud infrastructure is composed of two or more clouds (private or public) that remain unique entities but are linked in order to provide services.

2.3. Benefits of Cloud Computing Technology in Banks

The main benefits of using cloud services are that there is no need for up-front infrastructure investment, investment in software licenses and no risk of unused but paid software licenses and investment in hardware infrastructure maintenance and staff. Thus, capital expenditure is turned into operational expenditure. Users of a cloud service only use the volume of services resources they actually need, and only pay for the volume of IT resources they actually use. At the same time, they take advantage of the scalability and flexibility of a cloud.

Cloud computing enables easy and fast scaling of required computing resources on-demand (Stanoevska-Slabeva & Wozniak, 2010); reducing ongoing operational, upgrade and maintenance costs by the utility model this benefit can be described as an instant result of the first one regarding the traditional IT infrastructure (Van Elst, 2010); scaling up and down hardware, network capacity, and cost based on demand (elasticity). Cloud computing enables one to add or remove resources at a fine grain and with a lead time of minutes rather than weeks allowing matching of resources to workload much more closely (Armbrust, et al., 2009). This has everything to do with peaks in the demand (e.g. seasonal influences) for service resources. It could be complicated for an organization to determine the ultimate number of servers needed to perform their core business. The answer is often based on a cost-benefit analysis, however, with the concept of cloud computing, this should be history. Cloud computing provides a flexible solution for this ongoing change of demand for IT resources (Van Elst, 2010).

Higher availability differentiated to in-house solutions through the growing availability of Virtual Machine (VM's) is another advantage by allowing the creation of customized environments atop physical infrastructures; access to a variety of software applications and features offered as SaaS, the technique of virtualization can be fully exploited when using the cloud computing model. This means that software applications can be accessed through a web interface. The consequence is that the application portfolio is getting more and more dynamic regarding changes in the business demand for instance. Applications can be added and deleted to the application portfolio in the short term. Moreover, there is hardly any maintenance (Van Elst, 2010); the real strength of Cloud Computing is that it is a catalyst for more innovation. In fact, as cloud computing continues to become cheaper and more

ubiquitous, the opportunities for combinatorial innovation will only grow (Hofmann, Jordan, & Brynjolfsson, 2010).

2.4. Customer Relationship Management (CRM)

Customer Relationship Management (CRM) has become one of the most dynamic technology topics of the millennium (Debnath, Datta & Mukhopadhyay, 2016). CRM is not a concept that is really new but rather due to current development and advances in information and enterprise software technology it has assumed practical importance (Chen and Popovich, 2003). The root of CRM is relationship marketing, which has the objective of increasing the long-term profitability of customers by moving away from product-centric marketing.

(Bose, 2002) noted that CRM was invented because the customers dissent in their preferences and purchasing habits. As a result, understanding customer drivers and customer profitability, firms can better tailor their offerings to maximize the overall value of their customer portfolio (Chen and Popovich, 2003). The attention CRM is currently receiving across businesses is due to the fact that the marketing environment of today is highly saturated and more competitive (Chou et al, 2002). CRM generally is an enterprise-focused endeavor encompassing all departments in a business (Greenberg, 2004). He further explains that, in addition to customer service, CRM would also include, manufacturing, product testing, assembling as well as purchasing, and billing, and human resource, marketing, sales, and engineering. CRM is a complicated application that mines customer data, which has been retrieved from all the touch points of the customer, which then creates and enables the organization to have a complete view of the customers (Chen and Popovich, 2003). They further stated that CRM is a notion regarding how an organization can keep its most profitable customers and at the same time reduce cost, increase in values of interaction which then leads to high profits. The modern customer relationship management concept was shaped and influenced by the theories of total quality management and by new technological paradigms (Zineldin, 2000).

CRM in some firms is considered as a technology solution, considering individual databases and sales force automation tools and sales and marketing functions so as to improve targeting effort. Other organizations view CRM as a tool, which has been particularly designed for one-to-one customer communications, which is the function of sales, call centers or the marketing departments (Peppers and

Rogers, 1999). CRM stresses two-way communication from the customer to the supplier to build the customer over time (Frow and Payne, 2004) added that. CRM can be defined in IT terms as “an enterprise-wide integration of technologies working together, such as data warehouse, Web site, intranet/extranet, phone support system, accounting, sales, marketing, and production” (Bose, 2000). (Hedman, Kalling and Brady et al., 2002) view CRM as a marketing IT tool that helps companies in managing customer relationships. CRM uses IT to gather data, which can then be used to develop information acquired to create a more personal interaction with the customer (Kotler, 2000). In the long-term, it produces a method of continuous analysis and reinforcement in order to enhance the customer’s lifetime value with firms.

CRM is not merely technology applications for marketing, sales, and services but rather when it is successfully implemented; it enables firms to have cross-functional, customer-driven, technology-integrated business process management strategies that maximizes relationships (Goldenberg, 2000) believe that. But they maintained that in recent times many companies have realized the strategic importance of CRM, and as a result, it is becoming a business value-effort rather than technology-centric effort.

Using information technology as an enabler, CRM strategy leverages key functional areas to maximize the profitability of customer interactions (Chen and Popovich, 2003). For customers, CRM offers customization, simplicity, and convenience for completing transactions irrespective of the kind of channel of interaction used (Gulati and Garino, 2000). This view was further boosted by (Bose, 2002) that as a result of the changing nature of the global environment and competition, firms cannot compete favorably with minor advantages and tricks that can easily be copied by competing firms. The implementation of CRM is an enabled opportunity to go up the minor advantages with a real focus on developing actual relationships with customers. Firms that are most successful at delivering what customers want are the more likely to be leaders of the future.

2.5. Relationship between Cloud Computing Technology and Customer Relationship Management (CRM) in Banks

Today, the service industry is changing in the world. New technologies have changed the method of offering customer services in many service organizations.

Offering services by different banks have been influenced by information and communication technology and has undergone fundamental changes. According to Davis's technology acceptance model, the effect of different levels of determinant factors on customers' willingness to use e-banking services was investigated in the banking industry. Based on this model, perceived ease of use, perceived usefulness and an additional factor, i.e. perceived security were evaluated and the results showed that the effect of different levels of determinant factors on customers' willingness to use e-banking services is different (Gilaninia, 2011).

Customer relation management is considered a strategic necessity for all organizations because the efficient implementation of CRM can result in increased customer satisfaction, loyalty, and attraction and therefore lead to getting more sales and increasing repeat purchases (Papasolomou, I & Doukakis, 2002). Some organizations have difficulty in implementing CRM because their attitude towards this issue is only technological, in that they consider the CRM strategies equal with CRM technology. However, CRM is not a technological issue but it's a business issue that the tool of information technology should be allocated and designed for it should be matched with business operations and strategies (Ngai, E.W.T, 2005).

Customers are the best assets of an organization and the increasing number of organizations show the importance of being customer-oriented in today's competitive world. Moreover, organizations should create knowledge about customers, goods and services both inside (different functions of the organization) and outside (customer contact points) of the organization. Therefore, the managers of the organization should move towards understanding the main factors of success in customer relationship management (Greenberg. P, 2002). Considering the services that cloud computing technology provides in the domain of electronic services, can analyze the importance and dimensions of offering services by cloud computing technology in the banking industry:

From banking and cloud computing services point of view and providing infrastructure as a service that includes:

- Content Delivery Network: it is generally important for webpages or network services that are provided in wide geographical districts.
- Virtual Desktop Infrastructure: it reduces the autonomy of existing computers in a system to a thin client with the minimum hardware facilities and puts the major burden of storing and processing on the central host.

- Computing: decreased costs of hardware purchase, decreased costs of repair and maintenance, and high flexibility of the system.

Cloud computing services and providing “Platform as a Service” (PaaS). Applying PaaS in banking has a significant impact on the costs and loss of time in dispatching human forces and their training in distant branches.

Banking and providing “Software as a Service” (SaaS). In this model, the bank has no cost and concern about items such as hardware, software support, and the personnel of service maintenance and etc. because the central branch is responsible for all these items and their derivatives and it has the responsibility of cloud maintenance. The only things that each branch needs to access services are a web browser for employees, a username and a password (Iran Data-processing Company). Applying ideas, technologies and approaches of public cloud computing in an organization is a considerable option for many institutions that are not able to provide public cloud computing. Choosing the time of cloud services presentation and application is the recent answer to the make-or-buy question. Basically, cloud computing has become a more tangible concept because the inherent challenges of technology management (due to complicated and expensive methods that were addressed in large domestic IT teams in the past) have become more dominant. The advantage of cloud computing in response to these challenges has developed more and more and is suitable and interesting for all kinds of institutions.

The Software as a Services (SaaS) model is considered as a complete and improves the model of Cloud Computing that offer whole functionality to ship enterprises requirement. Hence, the SaaS model is known recently as the best method for automation for CRM systems. The user of the CRM can access the full functionality of that just with the web browser, even when they are in traveling, they can use it with the mobile device. Cloud computing advantages are lower costs. CRM based Cloud Computing is accessible on the internet.

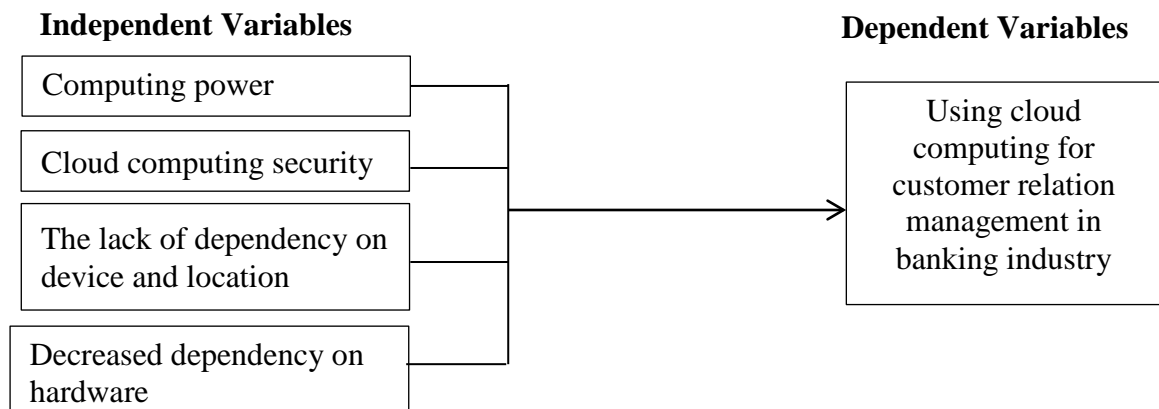
Consumers using CRM software just through the web browser, they don't know how the program works, because it's not installed and stored in users' computers. In this regard, principal cost saving is archived for the asset into software and hardware. Besides that, it is cost-saving in system maintenance, training of staff and IT staff. Actually, enterprises don't need to buy and install a CRM application on each computer in the office. Indeed, they rent software from the web browser and pay just for capacity and storage that they actually used. Better customer service, easy,

fast option to enable CRM and cost-saving are the most advantageous of the CRM based Cloud computing.

2.6. Conceptual Framework of the Study

The conceptual framework of the study is shown in Figure (2.1) respectively. Figure (2.1) illustrates the supporting factors of successful cloud computing services on the customer relationship management of the banking industry. With respect to the fact that considering all effective factors in the area of cloud computing and customer relation management is a difficult affair, using the following conceptual model. With respect to review of different researches in this domain and modeling reliable researches in the area of e-banking, planned behavior theory, and trust factor as an effective factor (Suh and Han, 2002), this model will be used for identifying the effect of cloud computing on customer relationship management in e-banking industry.

Figure 2.1 – The conceptual framework of the study



Source: (Suh and Han, 2002; Gilaninia, 2015)

In this model, the components of cloud computing include: 1) Computing power; 2) Cloud computing security; 3) The lack of dependency on device and location; 4) The decreased dependency on hardware. These components are the independent variables of the model and CRM effectiveness is the dependent variable. The components definition are as follow :

Computing power: increases the computing power of bank services and provides to improve the relation among bank's customers for adopting cloud services.

Cloud computing security: the security increases as a result of centralized data and the existence of more complicated security resources but also the concerns about the loss of control over sensitive data still remain.

The lack of dependency on device and location: users can access systems in every location and with every device (e.g. computer or mobile) that has a web browser and is connected to the Internet.

The decreased dependency on hardware: decreased costs of hardware purchase, decreased costs of repair and maintenance, and high flexibility of the system. This model will be analyzed as the base model.

CHAPTER 3

BACKGROUND STUDY OF UNITED AMARA BANK

UAB bank is a leading bank in Myanmar. Established in 2010, and serving the customers from a growing network of over 78 branches in 47 townships across Myanmar. UAB provided a wide range of financial services including consumer banking, premier banking, SME banking, corporate banking, trade finance and treasury services.

3.1 History of United Amara Bank

United Amara Bank was established in 2010 as a full-fledged Domestic private bank. On 16th August 2010, we opened our first branch in Nay Pyi Taw and the branch network has since grown to 78 branches across Myanmar. It is envisaged that the network will further expand to 100 branches by end -2020. In 2011, an Authorized Dealer License was obtained allowing the Bank to do foreign exchange transactions through its Money Changer Counters and subsequently on 9th July 2012, a Foreign Banking License was obtained which enabled the Bank to perform foreign banking transactions. The Bank is now fully licensed to make International money transfers and issue Letters of Credit.

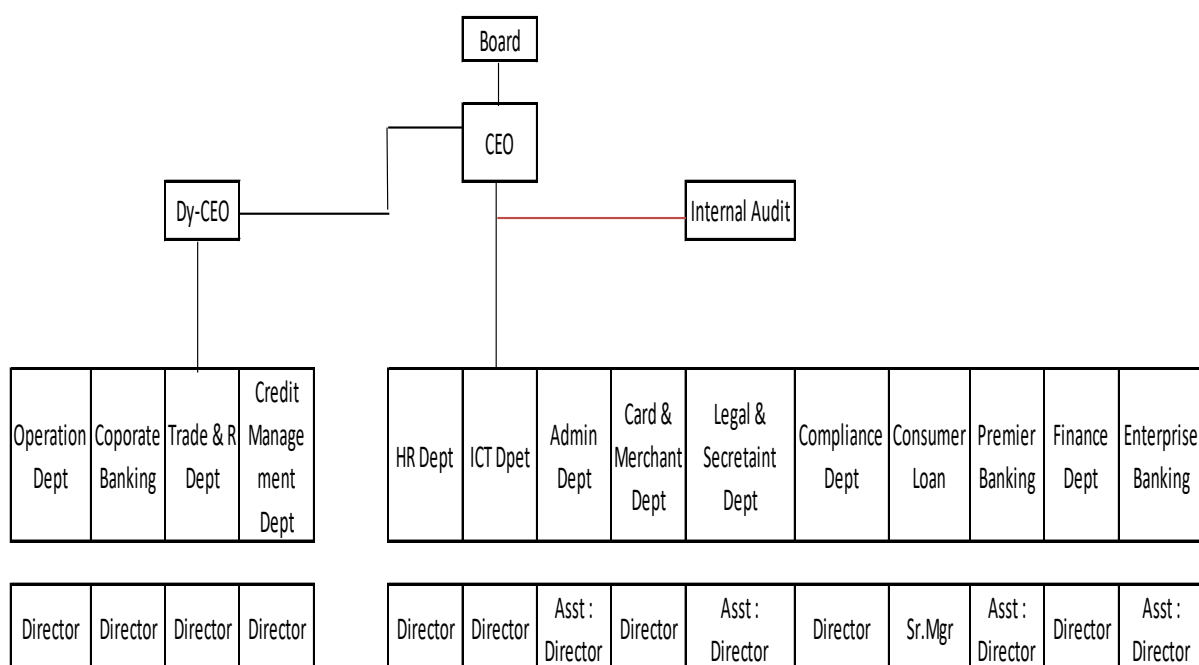
On 27th December 2012, the Bank began inbound money remittance through its partnership with Western Union Payment Inc. and in 2013, a principal license was obtained from VISA and MasterCard for the acquiring business. Apart from the traditional branches which are presently linked on-line via a modern Core Banking system, the bank currently deploys a number of ATMs across the country and provides an Internet Banking facility for 24/7 access for its Customers. United Amara Bank now operates a fully-fledged banking business both in domestic and foreign currencies serving its customers through its branches and electronic platform across Myanmar.

Risk Management and Corporate Governance is a key component of the Bank's culture and the Bank holds a strong commitment to its Motto of "Safe, Sound and Trustworthy". To reflect its growing maturity, the Bank received a number of awards over 2016 and 2017 and recognition both domestically and internationally continues to grow.

UAB Bank Administrative Head Office is located on No. 520 (A/4), Kabar Aye Pagoda Road, Bahan Township, Yangon, Myanmar. There are total (78) branches, (2) branches in Naypyitaw Region, (45) branches in Yangon Division which is the most developed zone in Myanmar. Moreover, they have (16) branches in Mandalay, the most second developed division and the rest (15) branches are located in various famous cities such as Taunggyi, Muse, Meikhtila, Pyin Oo Lwin, etc across Myanmar. UAB bank contributed its correspondent bank in German, Singapore, Malaysia, India, Thailand, South Korea, Japan, Taiwan, Sri Lanka, Turkey and China.

3.2. Organization Structure of UAB Bank

Figure 3.1



Source: UAB Bank, 2019

Directors, Assistant directors and senior managers who both work on level and report to the respective departments such as operation, administration, trade and finance, Human Resource Department and so on. While Operation Department, Corporate Banking, Trade and Finance and Credit Management Department directly reports to the Deputy CEO and other departments directly responsible for the CEO. However, the Internal Audit checks the activities of these departments.

3.3. Products and Services

United Amara Bank provides a full range of Retail and Corporate Banking facilities for its customers as follows. Retail banking, also known as consumer banking, is the provision of services by a UAB bank to the general public, rather than to companies, corporations or other banks, which are often described as wholesale banking. Retail Banking of UAB included deposit accounts, current account, savings account, fix deposits, UAB saving plan , smart saver account , Giro payment and so on.

Corporate banking, also known as business banking, refers to the aspect of banking that deals with corporate customers. Corporate Banking of UAB included working capital financing, warehouse financing and construction financing, bill discounting , export financing , import financing and supported to corporate money market and Forex services and also supported to investment banking services.

Trade finance signifies financing for trade, and it concerns both domestic and international trade transactions. Trade Finance of UAB included services are letter of credit (LC), documentary collection , bank guarantee and SWIFT and international Payments.

3.4. Cloud Computing Technology Practices for Customer Relationship Management in UAB Bank

Cloud computing is one of the fastest-growing technologies in the coming years. Financial applications will be the largest market for cloud services spending, with a gradual transition from on-premise to cloud-based services especially for general business applications like customer relationship management (CRM). UAB has used cloud computing technology in Bank's products and services for recent years. Therefore, UAB is expected to enter the cloud computing arena cautiously, with no single cloud services delivery model being a silver bullet for best meeting their demanding business needs. Cloud computing can help UAB improve performance in a number of ways.

Cost savings and Usage-based billing with cloud computing, financial institutions can turn large up-front capital expenditure into a smaller, ongoing operational cost. In addition, the unique nature of cloud computing allows UAB to pick and choose the services required on a pay-as-you-go basis.

UAB bank can gain a higher level of data protection, fault tolerance, and disaster recovery. Cloud computing also provides a high level of redundancy and back-up at a lower price than traditional managed solutions.

Business agility and focus on the flexibility of cloud-based operating models let UAB bank experience shorter development cycles for new products. UAB supports a faster and more efficient response to the needs of banking customers. Since the cloud is available on-demand, fewer infrastructure investments are required, saving initial set-up time. UAB bank got the new product development to move forward without capital investment.

As a result, bank firms can focus more on the business of financial services, not IT. The cloud computing technology is considered as complete and improves the whole functionality to ship enterprises requirement. Hence, cloud computing Technology is known recently as the best method for automation for CRM systems. The users of the CRM can access the full functionality of that just with the web browser, even when they are traveling, they can use it with the mobile device. Cloud computing advantages are lower costs. CRM based cloud computing is accessible on the internet. Consumers using CRM software just through the web browser, they don't know how the program works, because it's not installed and stored in users' computers. In this regard, principal cost saving is archived for the asset into software and hardware. Besides that, it is cost-saving in system maintenance, training of staff and IT staff. Actually, enterprises don't need to buy and install a CRM application on each computer in the office. Indeed, they rent software from the web browser and pay just for capacity and storage that they actually used. Better customer service, easy, fast option to enable CRM and cost-saving are the most advantageous of the CRM based cloud computing.

CHAPTER IV

EFFECT OF CLOUD COMPUTING TECHNOLOGY ON CUSTOMER RELATIONSHIP MANAGMENT

In this chapter, finding from analysis of the data from survey are presented with four sections. The first section is concerned about research design for this study, and the second section mentioned demographic characteristics of respondents. The practice of cloud computing technology on customer relationship management in UAB bank is described in third one. In the last section, the effectiveness of cloud computing technology practices on customer relationship management is analyzed.

4.1 Research Design

The objectives of the study are to examine cloud computing technology on customer relationship management in UAB bank and to analyze the effect of cloud computing technology on CRM in UAB bank. To carry out of these objectives, the primary data collection is used to obtained information and opinions directly and specifically from employee who are working in ICT department of UAB bank.

As a tool of research instrument, structured questionnaire has been used to obtain data by face-to-face data collection method. The study adapts the questionnaires from various part studied related to the topic and mainly used Likert scale measurement for all the variables constructed 35 question was made to collect data. It was organized into two section. Section one consisted of only two questions regarding the personal details of respondents. Section two was designed to sampled employee's agreement level about the practice of cloud computing practices and customer relationship management of UAB bank in the proposed theoretical framework. A five-point Likert scale has been used in this section to measure customer relationship management on cloud computing practices. The scaling is: 5 for strongly agree; 4 for agree, 3 for neutral, 2 for disagree and 1 for strongly disagree have been given in order to analyze data.

Among total of 30 out of 50 management level staff and 50 out of 100 of the ICT employee who have been working Head office of the bank are selected by simple random sampling method to obtain the information. Therefore, sample size for this thesis is 80 employees in ICT department of UAB. After collecting the data, the processed data are further analyzed by SPSS version 23. This thesis would apply the

both descriptive analysis such as frequency, percentage and measure of central tendency and variability and inferential analysis such as multiple linear regression analysis.

4.2 Demographic Characteristics of the Respondents

This section presents the profiles of selected employees of ICT department in UAB bank. The profiles cover the employees' gender, age, level of education and occupation level. All the data obtained from the questionnaires collected are interpreted and summarized in frequency distribution and percentage distribution. The frequency analysis of selected employee's demographic data is illustrated through the table of frequency counts, and their respective percentage.

Number of Respondents by Gender

The respondents are not only males, but also females. Table (4.1) shows the gender of respondents.

Table (4.1)

Number of Respondents by Gender

Gender	No. of Respondents	Percentage
Male	31	38.7
Female	49	61.3
Total	80	100.0

Source: Survey Data, 2019

According to the Table (4.1), it was found that out the 61.3% of respondents were of female while 38.7% were males. Therefore, this result captured female employees are most dominant working group of the employees at ICT department of UAB bank.

Number of Respondents by Age Group

Age of respondent are divided by three group. They are age between 18 and 25, age between 26 and 40 years and Age over 40 years. Table (4.2 shows the frequency distribution of age in year.

Table (4.2)

Number of Respondents by Age Group

Age (in year)	No. of Respondents	Percentage
18 – 25	14	17.5
26 – 40	57	71.2
51 – 60	9	11.3
Total	80	100.0

Source: Survey Data, 2019

Table (4.2) respectively shows the frequency distribution of age in year. They include three age groups. 71.2% of employees fall in the age between 26 and 40 years, followed by 17.5% employees fall between 18 and 25 years, and only 9% of employees fall age over 40 years, respectively in term of percentage share. Therefore, the majority of age group are age between 26 to 40 years in ICT department of UAB.

Number of Respondents by Education Level

There are two education levels among the respondents in the sample: Bachelor and master's degrees. The following Table (4.3) shows the level of education and qualification of the respondents and their percentage.

Table (4.3)

Number of Respondents by Education Level

Education Level	No. of Respondents	Percentage
Bachelor degree	42	52.5
Master degree	38	47.5
Total	80	100.0

Source: Survey Data, 2019

As the result of Table (4.3) shows that most of the respondents hold a bachelor's degrees with 52.5% and remaining 47.5% are holding in master's degree in different field of study. This indicates that most of the management and operational personnel have a high good level of education that is bachelor and master's degree and, they are well equipped with the information concerning cloud computing technology and they can respond precisely to the questionnaire.

Number of Respondents by Occupation

Employee's occupation is divided into two categories; management level staff and ICT staff. Table (4.4) shows the number of respondents by their occupation.

Table (4.4)

Number of Respondents by Occupation

Occupation	No. of Respondent	Percent
Management Level Staff	30	37.5
ICT staff	50	62.5
Total	80	100.0

Source: Survey Data, 2019

As a result of Table (4.4), about 62.5% of employees are ICT staff and remaining, 37.5% of the employees are management level staff. Therefore, most of the employees in the sample is ICT staff since they have specifically knowledge of cloud computing.

4.3. Analysis on Cloud Computing Technology

Cloud computing is the online storage, it is a new technology for storing and processing the data over the internet. It's a hybrid technology of computing various services like servers, software, networking, storage, and many more over the internet. Cloud computing creates an opportunity for UAB bankers to connect with their users directly. Digital services maintain customer relations anywhere and anytime through cloud computing. With the help of the internet, many services like storing, managing and accessing the information have become easier for both the UAB bankers and the consumers. Cloud computing is an easy technique to deploy and integrate with all the services of the UAB bank's system which decreases the time and effort of the user. Cloud computing increases the efficiency in the banking industry. The usage of cloud technology is an added advantage in the banking and finance sectors. Digitalizing the services will allow the UAB bank to build up an infrastructure to provide the best and appropriate service to the customers.

Therefore, this section mentions the findings with respect to objective one which to identify cloud computing practices of UAB. In this study, practices are a way of assessing the functionality of four components: cloud computing power, cloud computing security, lack of dependency on device and location and decreased dependency on hardware. These practice assessment statements were ranked in terms of their means and standard deviation as a way of interpreting results.

Cloud Computing Power

Cloud computing power is effect the decrease cost of purchase; decreased costs of repair and maintenance and high flexibility of system. Cloud computing power are measured by seven statement. All statement concerning cloud computing power are measured via five-point Likert scale. Table (4.5) shows the results of the respondents regarding the practices of risk identification.

Table (4.5)
Cloud Computing Power

Sr.	Statements	Mean Value	Standard Deviation
1	Cloud computing has been adopted in point of sale (POS) in your bank.	4.20	.920
2	Cloud computing has been adopted in ATM banking in your bank.	4.01	.834
3	Cloud computing has been adopted in mobile banking in your bank.	4.13	.891
4	Cloud computing has been adopted in internet banking in your bank.	3.95	.992
5	Cloud computing has been adopted in core-banking in your bank.	3.84	.987
6	Cloud Computing has been adopted in office e-mail in your bank.	4.01	.684
7	Your bank has been realized in improved communication and collaboration between individuals on adopting Cloud Computing.	4.50	.636
Overall Mean		4.09	

Source: Survey Data, 2019

As a result of Table (4.5), the mean score of improving communication and collaboration between individuals by adopting cloud computing is the most important factor since the mean score is 4.50 and, point of sale (POS) is the second-highest 4.20; while adopting in core banking by cloud computing has the lowest mean score of 3.84 and all statement with a little variation. The overall average value of cloud computing is 4.09. The result shows, that employees are most agreement that cloud computing power impacts on the customer relationship management and it is crucial.

Cloud Computing Security

Cloud computing security increase as a result of centralized data and the existence of more complicated security resources but the concerns about the loss of control over sensitive data still remain and the act of violence for using the cloud technology. Therefore, this section contains the findings in respect to cloud computing security which sought to assess the influence of securing cloud computing on the customer relationship management of UAB. To do this, the employees responded as provided in Table (4.6).

Table (4.6)
Cloud Computing Security

Sr.	Statements	Mean Value	Standard Deviation
1	UAB bank has to face vendor lock-in the adoption of cloud computing.	3.16	.987
2	Your bank has to face loss of cloud service termination or failure in the adoption of cloud computing.	3.89	.842
3	Your bank has to face data transfer bottle necks in the adoption of cloud computing.	3.69	.851
4	Your bank has to face intercepting data in transit security in the adoption of cloud computing.	3.68	.240
5	Your bank has to face distributed denial of service (ddos) attack in the adoption of cloud computing.	3.70	.257
6	Your bank has to face the act of violence in the adoption of cloud computing.	3.85	.713
7	Your bank has to face licensing issue in the adoption of cloud computing.	4.05	.692
Overall Mean		3.71	

Source: Survey Data, 2019

As a result of Table (4.6), it was found that the bank has to face the licensing issue in the adoption of cloud computing is the highest means scores of 4.05 and while facing vendor lock-in the adoption of cloud computing has the lowest mean score of 3.16 with a little standard deviation. This security section, UAB has the controlled and managed of this risk factor.

The overall mean score of cloud computing security is 3.71 shows that all respondents are moderately agreed that cloud computing security is impact of customer relationship management.

Lack of Dependency on Device and Location

This section pertains the findings in respect to lack of dependency on device and location which sought to access the influence of the customer relationship management. Five statements are measure by employee agreement level of lack of dependency on device and location. Table (4.7) shows the results of the respondents regarding the perception of lack of dependency on device and location. Concerning the lack of dependency on device and location, users can access systems in every location and with every device such as computer or mobile that has a web browser and is connected to the internet.

Table (4.7)
Lack of Dependency on Device and Location

Sr.	Statements	Mean Value	Standard Deviation
1	Customers accept the business reputation risk in the adoption of cloud computing of UAB bank.	3.64	.997
2	Customers can use UAB bank's service at any time.	3.68	.111
3	With every device, customers can, in confidence, use the UAB bank's service in security.	3.76	0.97
4	Customers can easily use UAB bank's service at all places without errors.	3.75	.096
5	Customers have to face availability of service risk in adoption of cloud computing of UAB bank.	3.29	.182
Overall Mean		3.62	

Source: Survey Data, 2019

Table (4.7) shows that customers can use with every device, customers can, in confidence, use the UAB Bank's service in security is the highest means scores of 3.76 and the standard deviation also suggests no varied responses from respondents with 0.97 while customers facing loss of business reputation risk in the adoption of cloud computing of UAB has the lowest mean score of 3.29 with a little standard deviation. The overall mean score of lack of dependency on device and location is 3.62. Therefore, it can be concluding that most of respondents are agree that the lack of dependency on device and location is impact of the customer relationship management in UAB.

Decreased Dependency on Hardware

One important factor for using the cloud computing technology is the decreased dependency on hardware. That why, users are no longer have to be limited to a specific network or computer. But risk to face the legal contacts that span various jurisdiction hence difficulty in enforcement risk issue. Nine statement are measured by the employee's agreement level concerning the decreased dependency on hardware. Table (4.8) shows the results of the respondents regarding the decreased dependency hardware. All the question statement covered to address the decreased dependency on hardware.

Table (4.8)
Decreased Dependency on Hardware

Sr.	Statements	Mean Value	Standard Deviation
1	Bank has been realized in reduced up front IT cost on adopting cloud computing.	3.16	.987
2	Bank has been realized in reduced cost of maintaining IT infrastructure on adopting cloud computing.	3.89	.842
3	Bank has been realized in enabled processes that are not otherwise cost-effective or feasible on adopting cloud computing.	3.69	.851
4	You bank has been agreed as to the benefits that your bank could realize in Reduced energy consumption on adopting cloud computing.	3.68	.240
5	Bank has been realized in assured IT services with limited resources on adopting cloud computing.	3.70	.257
6	Bank has been realized in faster product/ service development on adopting cloud computing.	3.85	.713
7	You agree as to the benefits that your bank could realize in rapid changing of business proceeds on adopting cloud computing.	4.05	.692
8	Your bank has been realized in improved analytical capabilities on adopting cloud computing.	3.15	.987
9	Bank has been realized in reduced total cost of ownership (TCO) on adopting cloud computing.	3.89	.842
Overall Mean		3.67	

Source: Survey Data, 2019

As a result of Table (4.8) shows that their bank could realize in rapid changing of business proceeds on adopting cloud computing with 4.05 and standard deviation also suggests no varied responses from respondents with 0.69 while realizing in improved analytical capabilities on adoption cloud computing has the lowest mean score of 3.15 with a little standard deviation of 0.84. The overall mean score of decreased dependency on hardware is 3.67. It can be concluded that all respondents are strongly agreed the decreased dependency on hardware effect the customer relationship management of UAB bank.

4.4. Customer Relationship Management of UAB Bank

To analyze the customer relationship management of UAB bank, questions were prepared into five statements and the results show with the overall mean score and standard deviation in the below Table (4.9). Respondents were asked to indicate the extent to which they agreed to statements relating to agreement of each factors on a five-point Likert scale (5= strongly agree, 1 = strongly disagree).

Table (4.9)

Customer Relationship Management of UAB Bank

Sr.	Statements	Mean Value	Standard Deviation
1	Cloud computing security influenced on customer relation management in UAB bank.	3.53	.242
2	The computing power of clouding computing influenced on customer relation management in UAB bank.	3.57	.016
3	The lack of dependency on device and location in using cloud computing influenced on customer relation management in UAB bank.	3.49	.968
4	The decreased dependency on hardware in using cloud computing influenced on customer relation management in UAB bank.	4.21	.412
5	Cloud computing influenced on electronic services and customer relationship management in UAB bank.	3.44	.178
Overall Mean		3.64	

Source: Survey Data, 2019

As a result of Table (4.9) the overall mean score of customer relationship management of UAB bank is 3.645. It can be concluded that all respondents are agreed that the using the cloud computing technology have dominant effect of customer relationship management in UAB. Therefore, it can be point out that could new IT technology cloud computing are provide on demand to customers through the network independently of the terminal device and location.

4.5. Effect of the Cloud Computing Practices on Customer Relationship Management of UAB Bank

This section contains an analysis on the customer relationship management in term of the adoption of cloud computing technology. The effectiveness of adoption of cloud computing technology has a great impact on the customer relationship management of UAB. Therefore, this study analyzes the cloud computing practices on the customer relationship management of UAB.

To examine the effect of cloud computing practices on customer relationship management of UAB, inferential analysis is used for the research by investigating the relationships between the four cloud computing practices such as cloud computing power, cloud computing security, lack of dependency on device and location and decreased dependency on hardware and responds variable of customer relationship management. Statistical analysis of this section included are Pearson’s correlation coefficient and multiple linear regression model.

Relationship between Cloud Computing Practices and Customer Relationship Management of UAB

To explore the relationship between each practices of cloud computing and customer relationship management, the Pearson’s correlation coefficient is used. Pearson correlation is measure the strength and direction of the relationship between two variables. Therefore, the relationship of independent variables and dependent variable is measured via Pearson Correlation. The person correlation coefficient of the four practices of cloud computing and customer relationship management are shown in Table (4.10).

Table (4.10)
Relationship between Cloud Computing Practices and Customer Relationship Management of UAB

Practices of Cloud Computing		CRM
Cloud Computing Power	Pearson Correlation Sig. (2-tailed)	.414** .000
Cloud Computing Security	Pearson Correlation Sig. (2-tailed)	.487** .000
Lack of dependency on device and location	Pearson Correlation Sig. (2-tailed)	.508** .000
Decreased dependency on hardware	Pearson Correlation Sig. (2-tailed)	.820** .000

Source: Survey Data, 2019

** . Correlation is significant at the 0.01 level (2-tailed).

According to Table (4.10), each practices of cloud computing have direct relationship with the customer relationship management of UAB. Through studying the relationship between cloud computing power and customer relationship management, there is moderate and direct relationship between these variables. Since resulted P value (0.00) is less than $\alpha=0.01$, the relationship is significant the 1% level of significance. Moreover, there is moderately and directly relationship between cloud computing security and customer relationship management since the value of correlation coefficient between that two variables is 0.487. The relationship between cloud computing security and customer relationship management is a significant at 1% level because the resulted p value is 0.000 that is less than alpha value 0.01.

And, there is fairly and directly relationship between lack of dependency on device and location and customer relationship management since the value of correlation coefficient between that variable is 0.508. The resulted P value (.000) is less than $\alpha=0.01$ (1% level of significant). Then, there is strongly and directly relationship between decreased dependency on hardware and customer relationship management since the value of correlation coefficient between that variable is 0.820. The resulted P value (.000) is less than $\alpha=0.01$ (1% level of significant). Since each of the practices of cloud computing technology have significant relationship with the customer relationship management by computed correlation coefficient, the next step develop the multiple linear regression model to examine the effect of cloud computing practices on customer relationship management.

4.5.2 Effect of Cloud Computing Management on Customer Relationship Management of UAB Bank

It is important to consider which practice of cloud computing technology out of the four practices can significantly explain customer relationship management of UAB. To perform this, the multiple linear regression model is setup to analyze research objective two. The output from generating multiple linear regression model is shown in Table (4.11)

Table (4.11)

Effect of Cloud Computing Practices on Customer Relationship Management

Cloud Computing Practices	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.698	.391		4.343	.000
Cloud Computing Power	.365	.090	.364	4.040	.000
Cloud Computing Security	.332	.159	.372	2.096	.039
Lack of Dependency on Device and Location	-.115	.170	-.137	-.680	.499
Decreased Dependency on Hardware	.801	.161	.590	4.962	.000
N=80, adjusted R ² = .73, F = 54.924 (p-value = 0.000)					

Source: Survey Data, 2019

The above results show that all the coefficients in the model are jointly significant at 1% level, which is indicated by the value of F-statistic (F = 54.924). According to the Table (4.11), three practices of cloud computing technology in the model namely cloud computing power, cloud computing security and decrease dependency on hardware are significant while the lack of dependency on device and location are not significant.

The magnitude of each coefficient indicates the amount how much the score of the dependent variable will change if the score of an independent variable increases by 1 unit while other things remain unchanged. That is, if the score of cloud computing power increases by 1 unit, while other thing remains unchanged, score of customer relationship management will increase by .365 units. If the score of cloud

computing security increases by 1 unit, while other thing remains unchanged, score of customer relationship management will increase by .332 units. If the score of decrease dependency on hardware increases by 1 unit, while other thing remains unchanged, customer relationship management will increase by .332 units.

In term of the magnitude of standardized coefficient, decreased dependency on hardware (beta = 0.590) is relatively the most important in explaining the customer relationship management of UAB with 1% level of significance. As the performance of regression model, the model can explain about 73% of the variation of the customer relationship management on practices of cloud computing technology.

CHAPTER 5

CONCLUSION

This chapter summarizes and makes conclusions on the findings of the study in relation to the objectives as indicated in Chapter One. This chapter further discusses the limitations of the study and makes recommendations for areas for further research.

5.1 Findings and Discussion

The first objective of the study was to establish the extent cloud computing has been adopted by United Amara Bank. Descriptive statistics were used to analyse the collected data, the results were presented in tables. The findings indicate that most banks have not adopted Cloud Computing for their core areas while some of the banks have adopted Cloud Computing for applications such as Enterprise Resource Planning, Customer Relationship Management, Office Email and Mobile Banking.

The second objective of the study was to determine the benefits of adopting cloud computing technology for UAB bank. Descriptive statistics were used to analyse the data collected. The study found out that cloud computing enables banks to save on costs while delivering services without compromising on security. The study findings showed cloud computing allows banks to convert high capital expenditures into operational costs that are more manageable. Using cloud computing, UAB banks are able to reach their customers in new interactive ways as well as innovate in a faster more efficient way.

The risks of UAB bank face while adopting cloud computing, the study found out that risks like; vendor lock-in, loss of governance, data security and the enforcing legal contracts that span various jurisdictions ranked highly amongst the respondents and were a deterrent to adopting cloud computing. In addition statutory requirements hinder bank from adopting cloud computing due to compliance challenges with the industries regulator. Although once the issue of security and statutory requirements most banks are willing to venture into cloud computing.

The study found that the mitigation strategies that can be employed by UAB bank included placing adequate audit controls and well defined policies and procedures that enforce to IT governance, as well as defining standard protocols for

cloud services that allow for data migration between service providers. The findings established that majority of the UAB bank have not deployed their applications on the cloud computing and those who have, have done so using a cautionary approach of deploying non-core applications such as office email, mobile banking and some of front-end systems which the bank has no control over since the service provider has deployed their application on the cloud.

The study identified that the UAB bank is well aware of all the benefits cloud computing offers such as reducing upfront IT costs, reducing IT maintenance costs, standardizing business processes that allows business to operate efficiently, provide new ways of engaging customers, ensuring IT services are provided despite limited resources and reducing the total cost of ownership (TCO). Despite these benefits, cloud computing has risks that UAB bank aware of that were categorized into security and policies and procedures that need to be addressed before bank is able to adopt cloud computing technology. The study established the following mitigation strategies that can be used to safe guard against the risks faced when adopting cloud computing: reviewing the internal audit process of cloud vendors, determining the frequency and the willingness of cloud vendors to be audited for compliance, establishing the level of control surrounding data and applications on the cloud, defining agreements that reduce conflicts when an issue arises as well as identify and define a customer's specific needs, having standard cloud intermediaries/resellers put a performance bond on escrow in the event the vendor fails to maintain the desired service levels they have something to lose also.

5.2 Suggestion

The study analyzed that the benefits of scalability, reliability, security, ease of deployment and ease of management can both be a friend and a foe from a security standpoint due to risks like data privacy, availability, performance and ownership but service providers are working to overcome these pitfalls. It is recommended for other banks that want to experiment with cloud computing to evaluate the current risks and mitigation strategies for safe and successful cloud computing implementations. According to the analyzed of cloud computing, bank get the good governance, controlled risk management and common sense on the part of organizations.

UAB bank is using the cloud computing in front-end system for electric banking like mobile banking and internet banking but not used in their core system. In

using front-end system, bank services are faster, easier in upgradeable and scalable system at any time. Customers can use the UAB bank 's services at any time with any devices ,anywhere smoothly. The study analyzes the recommended technology for other bank in Myanmar , cloud computing can help improving computing power , customer relation and reducing the decreased dependency on hardware, device and location.

5.3 Limitations and Need for Further Study

Cloud computing is a broad subject and the study was limited to its overall benefits and not benefits specific to each deployment model. The limitation of resources made it difficult to obtain responses from different banks. The study targeted ICT managers working in banks or their equivalents and did not interview ICT managers in other organizations as well as vendors of cloud services who could have given more insights into cloud computing. Another significant limitation of the study was the fact that cloud computing is relatively new and sufficient literature on the topic is not available some of the respondents had to inquire from peers and colleagues to complete the questionnaire.

Based on the findings, the following study areas provide additional insights for further research: critical success factors for cloud computing implementations.

In this view, the most suitable cloud computing model for banks to deploy on higher-level studies can also be designed in such a way that they investigate the causes and effects of relationships using advanced statistical data analysis techniques. Moreover, not only the advantages of using cloud computing technology in Banking sector but it can also benefit many sector such as commerce and trading, tourism and manufacturing and so on.

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APPENDIX

SECTION (I)

Demographic Information

1. Gender of Respondent - (a) Male (b) Female
2. Position - ()
3. Educational Level - (a) Bachelor degree (b) Master degree
4. Age.
 - a.18-25 years
 - b.26-40 years
 - c.41-50 years
 - d.51-60 years
 - e. above 60 years

SECTION (II)

Effect of Cloud Computing Technology on Customer Relationship Management in United Amara Bank

This following set of statement indicate the effect of cloud computing practices on customer relationship management in terms of performance , computing power and ease to use. Please indicate your agreement or disagreement with the statement reflecting your own perceptions about the use to cloud computing. The possible responses ranged from 1 (Strongly Disagree) to 5 (Strongly Agree).

I). Cloud Computing Power

No.	Description					
1.	Cloud computing has been adopted in point of sale (POS) in your bank					
2.	Cloud computing has been adopted in ATM banking in your bank.					
3.	Cloud computing has been adopted in mobile banking in your bank.					
4.	Cloud computing has been adopted in internet banking in your bank.					
5.	Cloud computing has been adopted in core-banking in your bank.					
6.	Cloud Computing has been adopted in office-email in your bank.					
7.	Your bank has been realized in improved communication and collaboration between individuals on adopting cloud computing.					

II).Decreased dependency on hardware

No.	Description					
1.	Your bank has been realized in reduced up front IT cost on adopting cloud computing.					
2.	Your bank has been realized in reduced cost of maintaining IT infrastructure on adopting cloud computing.					
3.	Your bank has been realized in enabled processes that are not otherwise cost-effective or feasible on adopting cloud computing.					
4.	You bank has been agreed as to the benefits that your bank could realize in reduced energy consumption on adopting cloud computing.					
5.	Your bank has been realized in assured IT services with limited resources on adopting cloud computing.					
6.	Your bank has been realized in faster product/ service development on adopting cloud computing.					
7.	You agree as to the benefits that your bank could realize in rapid changing of business proceeds on adopting cloud computing.					
8.	Your bank has been realized in improved analytical capabilities on adopting cloud computing.					
9.	Your bank has been realized in reduced total cost of ownership (TCO) on adopting cloud computing.					

III). Cloud Computing Security

No.	Description						
1.	UAB bank has to face vendor lock-in the adoption of cloud computing.						
2.	Your bank has to face loss of cloud service termination or failure in the adoption of cloud computing.						
3.	Your bank has to face data transfer bottle necks in the adoption of cloud computing.						
4.	Your bank has to face intercepting data in transit security in the adoption of cloud computing.						
5.	Your bank has to face distributed denial of service (ddos) attack in the adoption of cloud computing.						
6.	Your bank has to face the act of violence in the adoption of cloud computing.						
7.	Your bank has to face licensing issue in the adoption of cloud computing.						

IV).The lack of dependency on device and location

No.	Description						
1.	Customers accept the business reputation risk in the adoption of cloud computing of UAB bank.						
2.	Customers can use UAB Bank's service at any time.						
3.	With every device, customers can, in confidence, use the UAB Bank's service in security.						
4.	Customers can easily use UAB Bank's service at all places without errors.						
5.	Customers have to face Availability of service risk in adoption of Cloud computing of UAB bank.						

IV). Cloud Computing for customer relation management in UAB

No.	Description					
1.	Cloud computing security influenced on customer relation management in UAB bank.					
2.	The computing power of clouding computing influenced on customer relation management in UAB bank.					
3.	The lack of dependency on device and location in using cloud computing influenced on customer relation management in UAB bank.					
4.	The decreased dependency on hardware in using cloud computing influenced on customer relation management in UAB bank.					
5.	Cloud computing influenced on electronic services and customer relationship management in UAB bank.					