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COST EFFECTIVENESS OF CBM NET IN CB BANK

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# **COST EFFECTIVENESS OF CBM NET IN CB BANK**

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## **ABSTRACT**

The study focuses on cost effectiveness of payment, clearing and settlement system in CB Bank. The main purposes of this study are to identify the services provided by CBM Net and to analyze the cost effectiveness of CBM Net in CB bank. The thesis uses both primary data and secondary data. The personal interview was conducted with the respective officials from CB Bank and survey questionnaire have collected from CB bank's branch managers in Yangon Region. Secondary data have collected from Central Bank of Myanmar, CB bank's website, annual report, and internet data. The cost effectiveness is measured with system reliability, infrastructure, and staff competency. As per this analysis, it's found that there is cost effectiveness by using CBM Net for fund transfer and efficient as well. Results of the study showed that there is a slight positive relationship between staff competence and reduction in cost at CB Bank and between reliability and reduction in cost at CB Bank even though it is not significant. There is a significant positive relationship between use of CBM technology infrastructure and reduction in cost at CB Bank. As a result, the Central Bank of Myanmar should encourage the banks to use CBM Net and set the reasonable standard charges. Moreover, the current bilateral arrangement fund transfer method should be eliminated to standardize the payment system. All the local banks should implement the centralized core banking system and should look at cross bank fund transfer function thru bank's mobile banking or internet banking. The payment processing time should be shorter than current practices like within few minutes. The cash payment at over the counter should be through CBM Net portal.

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## **LIST OF ABBREVIATIONS**

ANZ	Australia and New Zealand Bank
AYA	Ayeyarwaddy Bank Limited
AGD	Asia Green Development Bank
CB	Co-operative Bank Limited
CBM	Central Bank of Myanmar
CHDB	Central Housing Development Bank
FPB	First Private Bank
GTB	Global Treasure Bank
ICBC	Industrial and Commercial Bank of China
JICA	Japan International Cooperation Agency
KBZ	Kanbawza Bank Limited
MAB	Myanmar Apex Bank
MCB	Myanmar Citizens Bank
MCH	Mechanized Clearing House
MDB	Mineral Development Bank
MEB	Myanmar Economic Bank
MFTB	Myanmar Foreign Trade Bank
MICB	Myanmar Investment and Commercial Bank
MMB	Myanmar Microfinance Bank
MMK	Myanmar Kyat
MOB	Myanmar Oriental Bank
MUFG	Mitsubishi UFG Financial Group

NSB	National Sibir Bank
OCBC	Oversea Chinese Banking Corporation
POS	Point of Sales
RDB	Rural Development Bank
RTGS	Real Time Gross Settlement
SBI	State Bank of India
SMBC	Sumitomo Mitsui Banking Corporation
SMIDB	Small and Medium Industry Bank
UAB	United Amara Bank
UOB	United Oversea Bank
USD	United State Dollar
YCB	Yangon City Bank
YOMA	Yoma Bank

# **CHAPTER I**

## **INTRODUCTION**

One of the main responsibilities of Central Bank of Myanmar (CBM) is to develop an efficient, fast, safe, and reliable payment system. Therefore, CBM has issued policies for payment system. One of the policies for non-cash payment system is improving efficiency of payment system. The CBM has educated the public, businesses and associations through banks and media to improve non-cash payment instruments. The banking network for efficient, fast, and safe national payment system, reporting system and Banking Network for Electronic Fund Transfer had been implemented in 2007 and the basic infrastructure had been built up between CBM and commercial banks. However, the payment system was manual clearing system and banks carry out final settlement (net settlement). If the banks suffer lack of funds, CBM provide intra-day credit facility for smooth settlement. In order to have better settlement system, the CBM has been implemented the manual clearing system to auto clearing system throughout the Central Bank Clearing Center. (CBM website). There are 3 MMK clearing house cross Myanmar which are located in Yangon, Mandalay and Naypyitaw.

In 2011, the CBM launched the electronic data transfer and implemented banking network for Electronic Fund Transfer (EFT) and reporting system among the financial institutions. The Payment System Upgrading Committee was organized on October 12, 2010 to study and explore the efficient, appropriate, and sustainable domestic and international payment systems, new means of payment instruments and to follow up the international best practice of the payment system. (Source: <https://www.cbm.gov.mm/>)

The CBM has upgraded manual clearing system to auto clearing system in 2015. However, it is not really automated and still paper based clearing system by using paper credit note. As current clearing system is still the lack of efficiency from banks' point of view, the CBM would implement the sending transaction data via electronic channel without sending physical credit notes to organizer and upgrade they system in 2020.

The CBM allowed 7 local banks to operate international banking in 2012 which are KBZ, AYA, CB, MAB, UAB, AGD and MOB, prior that all the banks operated only domestic

banking except MFTB and MICB. Thereafter, the CBM allowed 19 private banks to operate international banking. In 2015 and 2016, 13 foreign banks entered Myanmar market and has operated commercial banking service with limitation which was wholly owned foreign entities and joint venture corporate account service only and prohibited from pursuing retail operations, such as opening of saving accounts, local money transfer, and extending loans in local currency. There are 4 state-owned banks, 11 semi-government banks, 16 private banks and 13 foreign banks operate banking business in Myanmar. The state-owned banks are MEB, MFTB, MICB and Myanmar Agricultural Development Bank. The 11 semi-government banks are CHDB, GTB, INNWA, MDB, MCB, Myawaddy Bank, NSB, RDB, SMIDB, Yadanabon Bank and YCB. The 16 private banks are KBZ, AYA, CB, MAB, Yoma, AGD, A Bank, UAB, AYB, FPB, G Bank, MOB, MMB, MTB, Shwe Bank and Tun Commercial Bank. The foreign 13 banks branches are ANZ, UOB, OCBC, MUFG, SMBC, Mizuho, May bank, Shinhan, ESun, BIDV, Bangkok, ICBC and SBI. Although many local banks drive the banking sector, there are less than 10 actively driven banks. Moreover, many banks' branches run standalone without having core-banking system.

## **1.1 Rationale of the Study**

The financial sector plays an important role for economic development. A sound financial system is essential for economy's health. Myanmar is cash-based society and only 25.61% of the population aged 15 years old and above has account at banks in 2017. (Source: GIZ Banking Report Myanmar 2018). Most of the transactions are based in cash for both retail and corporate. The government and financial service providers drive to cashless society by promoting wallet money such as Wave Money, True Money etc.

Although the banking sector was opened in 2012 by allowing international banking business, the efficient payment system was not in place yet. The foreign direct investment (FDI) had been rising sharply for several years and foreign banks entered Myanmar market for branch operation and finally 13 foreign banks grant the commercial banking license with 1 branch and prohibited from retail business in 2015 and 2016. The foreign banks could only lend to foreign or local-foreign joint venture firms and are permitted to

partner with local banks to do business with local corporations. Therefore, KBZ and SMBC, AYA and Mizuho, CB and MUFG became strategic partners and continues collaboration in many areas. There are 49 foreign banks with representative office in Myanmar and some has interest to operate the branch or subsidiary if they would have chance to do so. The CBM issued Notification No. 6 of 2018, permitting foreign banks' branch to provide financing and other services to local businesses. The vice-governor of the CBM, U Bo Bo Nge mentioned that more foreign banks' branch would be permitted in 2019 and would also be allowed to provide retail business in both kyat, foreign currencies and loans in foreign currencies would be free from interest rate caps.(Source: Myanmar Business Guide, 2017)

The government has been intensified its focus on banking sector reforms recently, with the country's long-term economic development agenda, the Myanmar Sustainable Development Plan (MSDP) 2018-30. The plan identifies that banking sector reforms is an important support mechanism. The specific plans would make up the banking sector focus on strengthening the capacity of domestic institutions by developing a robust network of commercial banks, including foreign banks. The Myanmar Sustainable Development Plan aims to increase the ability of foreign banks to participate in domestic banking activities through the continued liberalization of market access, and by allowing them to take equity positions in domestic banks. (Source: The Report Myanmar 2019)

As the financial sector is rapidly growing day by day, sound financial payment and settlement is essential and should be in place. Prior to the CBM implemented the payment and settlement system (CBM Net), banks opened bilateral accounts and send fax the payment instruction from ordering bank to beneficiary banks or branches and do netting at the end of the day. For the cheque clearing, there is no USD cheque clearing and only 3 MMK cheque clearing house throughout country. It means that cheque issue in Yangon must clear in Yangon and same thing happen at Mandalay and Naypyitaw as well and it leads to limiting of using cheque. The cheque clearing member banks must reach to clearing house at 10am to clear cheque manually by distributing the physical cheque to issuing banks and it take whole day to clear the cheque. Therefore, the clearing system was not run efficiently.

As mentioned above, the CBM upgraded the payment system and more functions are developed which are fund transfer (cross banks) and CCT (Customer Credit Transfer). Although the functions are in place, banks are hesitated to use it for many barriers except foreign banks such as fund management to maintain Reserve Requirement Ratio 5% and there's penalty if the ratio is shortfall. As such, bank is required to monitor funds condition at CBM by viewing all the incoming and outgoing transactions. Moreover, the processing for fund replenishment to account at CBM is time consuming. Since the local bank's transaction volume are huge, all the local bank still prefers to go traditional way (bilateral arrangement among banks) rather than using of CBM Net channel.

CB bank is 3<sup>rd</sup> largest banks in Myanmar in terms of asset size and was established in 1992. However, the bank is playing leading role in digital banking and aims to be the best digital bank in Myanmar. Over the years, the bank has rapidly expanded its banking services and branch networks across the country. The bank has always been ahead of the curve especially in terms of digital transformation and strategic partnership. It was one of the first banks to roll out credit and debit cards in Myanmar and other notable first initiatives are Centralized Core banking system, Mobile banking, Personal and Business Internet Banking, Mobile Agent Banking service which is mainly focus on unbanked people in rural areas enabling Money Transfer, Withdrawal Cash, Deposit, Mobile Phone Top-up, Withdrawal Foreign Remittance and Distributer Payments. CB Banks was first bank to form partnership with Post Offices around the country to offer Mobile Agent Banking Services.

The bank initiated the cross banks MMK fund transfer function through internet banking and only bank that accept non-trade payment Telegraphic Transfer (T/T) through internet banking without visiting branch. The bank aims to create a customer experience that is digital from end-to-end enabling customers to apply for savings account and loans, and then manage their accounts through digital touch points and to evolve into a 21<sup>st</sup> century customer value-oriented organization that utilizes technology to facilitate

the client experience and benefit that extends beyond traditional banking. CB Bank received Best Digital Bank in 2<sup>nd</sup> consecutive year.

Based on the above discussion and highlights, this study intends to find out cost effectiveness of payment by using CBM Net. The suggestion will make to provide bank to choose effective and efficient way of cross bank payment system.

## **1.2 Objectives of the Study**

The main objectives of this study are

1. To identify the services provided by CBM Net.
2. To analyze the cost effectiveness of CBM Net in CB bank.

## **1.3 Scope and Method of the Study**

This study focuses on services provided by CBM Net and analyze the cost effectiveness on making cross bank transfer, payment, and settlement system by using CBM Net at CB bank. The questionnaire focused on 50 branches in Yangon region and answered by responsible persons in management such as Division Head, Department Heads, and branch managers from bank's point of view. In this study, descriptive method was applied. Moreover, this study would be done by using of primary and secondary data. Secondary data would be collected from previous research, related websites, Central Bank of Myanmar, and CB Bank for this study.

## **1.4 Organization of the Study**

This study will be organized with five chapters. The first one is introduction Chapter I which contains rational of the study, objectives of the study, scope and method of the study and organization of the study. Chapter II describes the theoretical background of payment system. In chapter III, profile of CB Bank which include vision, mission, objectives, corporate governance, it's financial products and services. Chapter IV presents analysis the effectiveness and efficiency of national payment system. Finally, chapter V shows conclusions including finding, discussion suggestion, recommendations and need for further research for effective and efficient national payment system.



## **CHAPTER II**

### **THEORETICAL BACKGROUND**

This study reviews the theories which consider relevant to research the cost effectiveness of payment and settlement system (CBM Net). The discussion focused on perspectives on diffusion of innovation theory which explain the acceptance of technology was main factor in driven adoption of technology, technology acceptance model (TAM) that is developed by Davies (1989). The conceptual framework of the study is presented in the last part of this chapter.

#### **2.1. Innovation Diffusion Theory**

The Innovation Diffusion Theory was developed by Everett M. Rogers in 1962 and seek to explain in which conditions new ideas and technology spread. There was a set of generalizations regarding the typical spread of innovations within a social system in Roger's theory. The theory highlighted the creation of a new ideas as payment system and how it disseminates to the community and the aspects affecting the implementation of such new system. The diffusion's result is that people, as part of a social system, adopt a new idea, behavior, or product. (Source: Wayne W. LaMorte, 2019). According to Teo and Pok (2003), the innovation theory is a theory which enlightens acceptance and intention to use technology that is relevant and applicable to this study. There are five characteristics of improvement as below

1. Relative advantage that Rogers (2003) defined relative advantages as "the degree to which an innovation is perceived as being better than the idea it supersedes"
2. According to Rogers (2003), Compatibility is the degree to which an innovation is perceived as consistent with people's practices.
3. Complexity is the degree which suggest how much development seen as hard to understand and use.

4. According to Rogers (2003), Trialability is the degree which an innovation may be experimented with on a limited basis.
5. Observability is defined as the degree to which the results of an innovation are visible to others, Roger (2003).

This theory highlights the creation of new idea or an object such as new payment system and how it's effect to the user by using various channel and the feature affecting the using of system, therefore it's very relevant to this study.

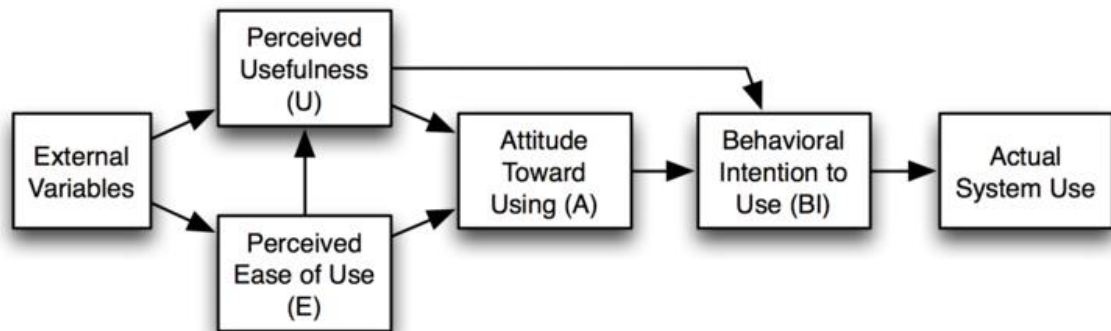
## **2.2 Technology Acceptance Model**

The technology acceptance model (TAM) was developed by Davis (1989), Venkatesh & Davis (2000), explained about relationship between perceived usefulness (PU) and perceived ease of use (PEOU). Davis (1898) suggested the Technology Acceptance Model as an adjustment to The Ajzen and Fishbein's theory of reasoned action (TRA). The objective of the adjustment was the development of model recognition in IT.

David (1898) suggested that TAM focus on the objective of the customers' acknowledgement or dismiss the data innovation and how to increase the acknowledgement, offering along these lines, a support to forecast and clarify the acknowledgement. The TAM has the benefit of focusing on data innovation and has a solid hypothetical foundation, other than the wide empirical evidence, Davis (1989). (Source: Muchiri Duncan Wachira, 2016). The TAM basically focuses on 2 factors: the perceived usefulness and perceived ease-of-use, notice that both dignified totally impacts of outer factors, Davis (1989).

Perceived usefulness defined as the degree which a person trust that using a system would be raised his/her job execution. David defined perceived ease of use as the degree to which a person trust that using a particular system shall be free from effort. If the system is user friendly, people have positive attitude to use it. The external variable is a key factor to decide the attitude as social influence.

**Figure: 2.1 Technology Acceptance Model**



Source: Davis, Bagozzi & Warshaw 1989

As per the above model, the attitude toward using influence the behavioral intention to use to get end point which is the actual system use. On the other side, the connection between perceived usefulness and perceived ease of use based on the possibility that people accept that their job execution would be effective. The Davis and Warshaw (1989) assume that the spared exertion, due to the change in the evident that helpfulness in different tasks and individual complete more work with similar exertion would lead to have impact in the convenience. Perceived usefulness has a casual impact on perceived usefulness.

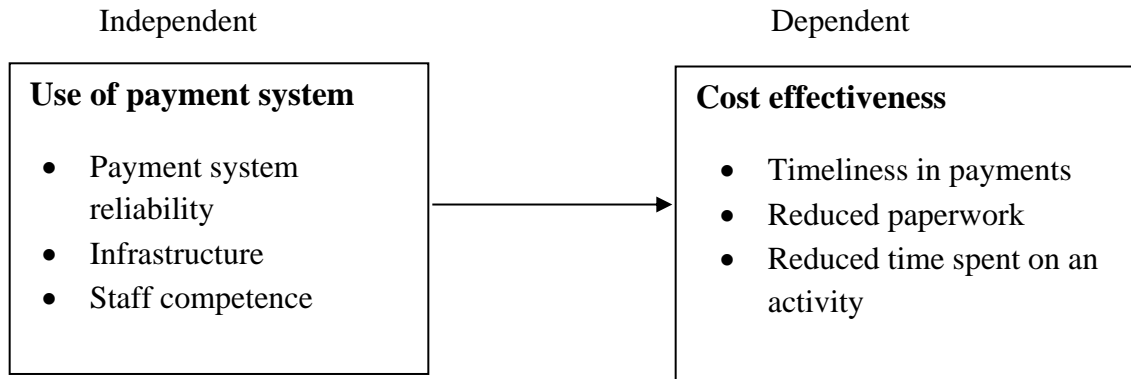
### **2.3 Payment and Settlement System**

The payment and settlement system is settlement of financial transactions and involve procedure, supportive technical and program facilities for implementation fund transfer, execution of final settlement. The nature of payment system uses cash-substitute, such as cheques or electronic messages to reflect the credit or debit for transaction.

## 2.4 Conceptual Framework of the study

The objective of study is factors influencing on cost effectiveness namely timeliness in processing payments, reduced paperwork, reduced time spent on transaction processing due to use of payment system reliability, good infrastructure, and competent staff.

**Figure 2.2: Conceptual Framework**



Source: Muchiri Duncan Wachira, 2016

Based on literature review, the above conceptual framework of the study is adopted. In this study, independent variables are payment system reliability, infrastructure, and staff competence. Dependent variables are cost effectiveness. The result would show that use of payment system would affect on reducing in cost.

## **CHAPTER III**

### **PROFILE OF CB BANK AND CBM NET**

This chapter presents the history of CB Bank, banking services provided by the bank and the available services (functions) in payment system (CBM Net).

#### **3.1 History of Co-operative Bank**

The Co-operative bank (CB bank) was established as a private bank in 1992 with 33 people and 1 branch. The Co-operative Farmers Bank and Co-operative Promoters Bank merged in 2004 and transformed into a public company. The bank is one of the top 3 leading banks in Myanmar with variety of services offering. Although the bank positioning is no. 3 based on the asset size, the bank is in leading role in terms of products and technology and one the largest private lenders in Myanmar. The bank has rapidly expanded its banking services and branch networks across the country.

In 2011, The bank introduced ATM services and become one of the highest numbers of ATM networks and one of the largest private lenders. In 2012, the bank developed POS system and accepted VISA, MASTER, UNION PAY card at CB bank's POS. CB bank is one of the first banks roll out credit and debit cards in Myanmar. The bank implemented centralized core banking system T24 in 2012 as well. At the times, the bank opened 26 branches across the country. The bank introduced very first mobile banking in 2014 and internet banking in 2015 respectively. The bank introduced mobile agent service to provide the banking service in rural areas. The bank expended the branch network to 206 branches and employee number has grown from 33 to almost 9000 employees.

##### **3.1.1 Bank's Motto, Vision and Mission**

The bank's motto is "Let's win-win together!". The bank wants to become the best financial solution provider in Myanmar with solid founding of risk management and corporate governance, leader in technology and innovation, the bank where the

employees are proud working for and customers wants to build long term relationship. The Mission is to serve the customers, staff, shareholders, the environment in the greatest of values, perfect pleasure, and complete satisfaction.

### **3.1.2 Management**

The CEO, U Kyaw Lynn, appointed by Board of Directors drives the bank with two managing directors, Business and Operation Support. All the business-related activities are taking care by MD (Business) and support dept like compliance, admin, HR, etc are under MD (Support) control. The shareholders elected the Board of Directors and CEO is appointed by Board of Directors.

### **3.1.3 Business Activities**

Partnership is important, and CB Bank is continuing partnership with local entities and foreign banks and foreign organizations. CB Bank and Bank of Tokyo Mitsubishi UFJ sealed the strategic partnership in 2013 even before MUFG received branch license in Myanmar in 2014. The CB bank has worked with Myanmar Insurance to support Small and Medium Enterprise (SME) and come up Credit Guarantee Insurance (CGI). The SME can get financing from bank without collateral under this scheme. Another partnership tied up to support SME is with JICA from Japan and KFW from Germany. Both organizations support technical support to CB Bank to support SME clients. CB Bank partner with UBER and GRAB as digital initiatives and banking partner. CB bank open bank account for drivers in onboarding process and handle payment processing. Another partnership is with Myanmar Post Offices throughout the region which model is post office act as mobile agent where customer can do basic banking services such as encashment, transfer, etc., which increase the branch coverage network.

## **3.2 CB Bank's products and services**

CB Bank provide consumer banking, commercial banking, SME banking and Prestige banking. There are variety of products for individuals and business-related banking. The daily banking services such as Saving Account, Current Account, Fixed Deposit Account,

Call Deposit, Minor Deposit and Foreign Currency Account can open at CB bank. The companies and foreign can only open non-interest bearing FCY and MMK accounts respectively. The customer can apply credit card, debit card, and have chance to get POS (Point of Sale) terminal for shop if necessary. Although the person does not have account with CB and do not want to bring lots of cash to foreign, he/she can buy easi travel card, either Master or Visa at any CB counters. CB bank is always finding the ways to support their customers and come out with lots of loan scheme for retail and commercial such as Education loan, Housing loan, Hire Purchase, Working Capital loan, Term loan, etc.

CB bank support their export/import customers by providing Trade Financing such as pre-shipment financing, post-shipment financing, Trust-receipt financing, Invoice Financing. CB bank support not only the international trade, also local trade which is Local Letter of Credit. CB bank offer Guarantee service to support their customer needs as well, such as Shipping Guarantee, Bid Bond (Tender Guarantee), Performance Bank Guarantee, etc.

As one of the CB Bank aims is to be the digital bank, CB invest a lot in technology by making strong centralized core banking system which mean customer can deposit, withdraw and transfer across the country within a minute. Moreover, customer can transfer to outside country at any CB bank branch counters and issue Letter of Credit as well. By having strong centralized core banking system, CB can support cash management service to MNC and Corporate customers. The cash management service mean providing Account Payable and Account Receivable service with real time eAlert and customized account statement.

### **3.3 The Payment System**

The payment and settlement system is the network where banks can transact payment instruction to another banks, sending payment message. Normally payment can be made in different currencies by several mode like cash, cheque, account transfer, card payments and via electronic. The value transferred is normally stored in depository accounts at bank. The banks are connected to the central payment and clearing system which process the payment.

Basically, there are four steps in payment processing:

1. Payment Instructions

Payment instruction from customer is informing bank to make payment of certain amount from his/her account to payee account. If the both accounts maintain at same bank, bank will perform book transfer. If the payee account at other bank, the payer's bank will send payment instruction through the network that involve payer information, payee information, amount, and purpose of payment.

2. Payment Transmission

The payer bank enters the instructions into the system and transmitted via CBM Net or printed on cheque or wire transfer.

3. Clearing

Clearing is the process that banks made the payments and settlement within the banking network.

4. Settlement

The settlement is final step that payer bank's account would be debited and credited to payee's bank account. The actual payment processing would be based on payment instrument types that payer chooses and their bank as well.

### **3.3.1 Payment, Clearing and Settlement System in Myanmar**

The payment system in Myanmar involve mechanisms processing for both domestic fund transfer and cross border payment which use SWIFT (Society for Worldwide International Financial Telecommunication). At the consumer (retail) stage, cash and account transfer are processed in many systems which include cheque clearing system and all the banks use bilateral account opening method to perform transfer from one bank to another before CBM Net was introduced. According to CBM 's one of the objectives



which is to promote efficient payment, clearing and settlement, it adopted the policies for system improvement.

There are three MMK cheque clearing house in Myanmar which located in Yangon, Mandalay and Naypyitaw. The cheque issue in lower Myanmar clear at Yangon clearing house, cheque issue in upper Myanmar clear at Mandalay clearing house and same structure for Naypyitaw clearing house as well and there is no clearing house for USD. The Cheques is commonly used for larger payment and Payment Orders is used mostly for tax payment.

Prior to payment and settlement system (CBM Net) was introduced in late 2011, all the bank opened bilateral account and perform cash and non-cash (account) transfer within the banking alliance network. Most of the banks do not charge for book transfer when payer account and payee account maintain in same bank in same region. However, if the payer and payee accounts are in different region, the service fee charge from 0.005% and based on transferred region which mean transfer to Mandalay and transfer to Muse may be different charge. When the transfer happens at different bank which mean payer and payee account maintain at different bank, the service fee is from 0.010% to 0.015% depends on payee banks. The customer can do account transfer or cash payment at counters. Since there was no payment system in place yet, all the payment instructions to same bank branches or different bank send via fax and it faces many difficulties such as one headcount for one branch is used for sending the fax and the impact is on human resource, fax line would be engaged all the time and it caused the payment delay.

In order to develop the payment mechanism in Myanmar, MPSDC (Myanmar Payment System Development Committee) was formed in 2008. The Committee had set up the Electronic Fund Transfer (EFT) function which banks can make fund transfer. The banks can make larger fund transfer thru EFT and these payments settle almost in real time.

### **3.3.2 Functions of payment system (CBM Net)**

The Central Bank of Myanmar (CBM) worked with NTT Data to develop a new banking system and the project was funded by Japanese government via Japan International Cooperation Agency (JICA) and completed in December 2015 and fully launched in January 2016. This was designed to upgrade manual processes to a fully automated and centralized system. This is network system between the Central Bank of Myanmar and member banks which are state-owned banks, private banks, and foreign bank branches. The inter-bank messaging is used for fund replenishment to account with CBM, withdraw and replying messages to other banks regards with payment transactions. The fund transfer (MMK) is for FX, currency movement and fund transfer to other banks. There are four main functions (features) in the CBM Net system where CBM and member banks can transact.

1. Fund Settlement (Customer Credit Transfer)

The fund transfer to customer account can be done within the member banks with each bank's CBM account. When payee bank receives the payment instruction thru CBM Net, the bank will credit to customer account.

2. Fund Settlement (Transfer)

The member banks can do fund settlement for netting by using account with CBM.

3. Common Business (Interbank messaging)

The member banks can send messages to each other when require to amend or reply the payment instructions. Moreover, banks can send information related to CBM such as deposit, withdraw and received network instruction.

#### 4. Collateral Management

The member banks can borrow from CBM by pledging the T-bond/bill when the account balance is in shortfall position, renewal of matured T-bond/bill and also banks can transfer T-bond/bill, confirmation on T-bond/bill request for buying or selling, cancellation of request and buying or selling T-bond/bill among local private banks. The banks can trade T-bond/bill thru the system and able to do the settlement as well.

##### **3.3.3 Advantages and disadvantages of using CBM Net system**

Banks can send interbank message to CBM for deposit and withdrawal with short notice rather than the original documents was required to send one day in advance. The bank staff was not required to visit CBM to transfer when the clearing time was over for other banks' cheque and can transfer with other bank's branch code thru CBM Net system. When banks are required to transfer within account with CBM (Yangon, Mandalay, Naypyitaw) and bank's department are required to make payment, the banks can perform the transaction thru the CBM Net with transaction fee MMK 1,000 and not required to send original documents to CBM. Upon auction is passed for T-bond/bill, bank can continue processing thru the CBM Net system and not required to visit CBM.

The first of the disadvantages of using CBM Net is the account statement inquiry report is available till 4pm and can't perform the back date. The second one is collateral. As mentioned above, the bank can pledge the collateral when account balance with CBM is short fall, however it can perform only before 3pm and the repayment must be made within 3 days. Moreover, the service fee is high compare to bilateral arrangement method which is start from 0.010% for transfer to different bank as mentioned above. In the CBM Net, the sending bank and receiving bank charge 0.005% (min MMK 1,000) to sender and receiver respectively.

### **3.3.4 Mechanized Clearing House (MCH)**

The Mechanized Clearing House is centralized processing of cheque clearing where use specialized standard cheques that printed with Magnetic Ink Character Recognition (MICR) grade quality paper. The MCH system was live in all clearing zone at Yangon, Mandalay and Naypyitaw since 5.1.2016. Instead of the banks' staff give and collect the cheques manually at clearing hall, the staff can use the machine which is provided by JICA for sorting. The clearing member banks is required to encode the amount on each cheque and required information such as amount of cheques and total number on attached slips before visit to clearing house. The clearing member banks perform the following by start using the MCH clearing.

1. Change to one bank, one member from one clearing member from each branches.
2. Standardized cheque is in place instead of different size and different design of each bank.
3. Settlement can thru CBM Net system rather than netting settlement.
4. Clearing time changed to 10am from 12pm.
5. Delivery cheques are required to print with encoder rather than using schedule format.
6. Regards with the return cheques, debit note is substitute with dishonored cheque and settlement become T+0 from T+2.
7. The banks' assistant manager is required to visit to clearing house to authorize the replacement cheque.

# **CHAPTER IV**

## **ANALYSIS OF THE COST EFFECTIVENESS OF CBM NET IN CB BANK**

One of the objectives of this study is to examine the cost effectiveness of CBM Net in CB Bank. The findings of the analysis of cost effectiveness of CBM Net in CB bank are presented in this chapter.

### **4.1 Response Rate**

The study was directed on a sample of 50 staff from 86 branches (in Yangon region) out of 210 branches, which are total population. The insights investigation was utilized to demonstrate the connections between factors. Out of staffs at 86 branches, all questionnaires were appropriately filled and hence, it is viewed as attractive to make conclusions for the study.

### **4.2 Demographic information**

The study looked to discover the foundation data of the respondents required in the study, the foundation data focuses at the respondents' appropriateness in noting the inquiries.

#### **4.2.1 Position in the organization**

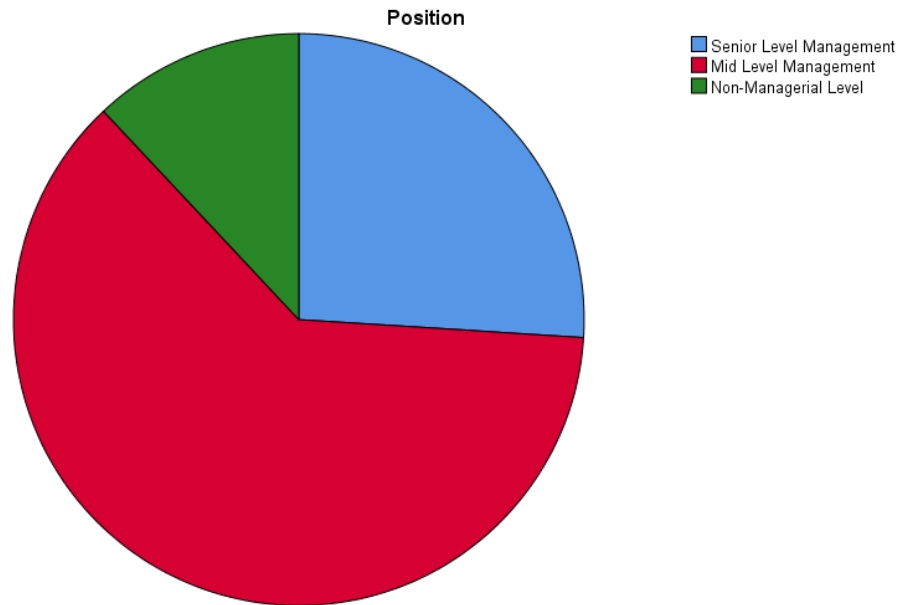
The bank staff were requested to disclose their current position in CB bank. The findings are illustrated in the Table 4.1 and Figure 4.1 as below.

**Table 4.1: Position in the respondents**

	<b>Frequency</b>	<b>Percent</b>
Senior Level Management	13	26.0
Mid-Level Management	31	62.0
Non-Managerial Level	6	12.0
	50	100

Source: Survey Data, 2019

**Figure 4.1: Position in the organization**



Survey Data 2019

Based on the findings, it could be established that most of the respondents were mid-level management, 2<sup>nd</sup> and 3<sup>rd</sup> largest group were senior level management and non-managerial level accordingly. This is because CBM net system operations are mostly done by mid-level management and hence, they have better views on how the system operates.

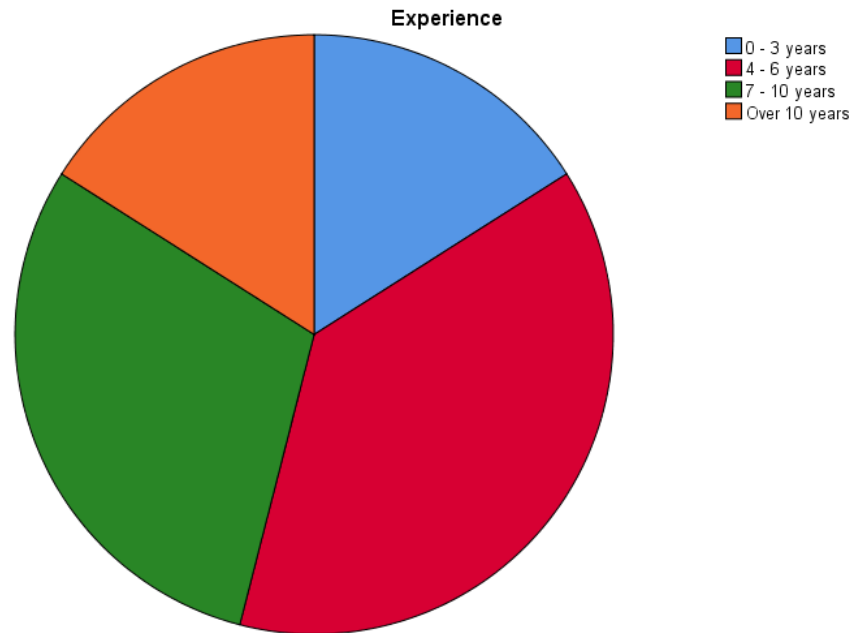
#### 4.2.2 Working in the organization

The study requested respondents to indicate the period of time they had worked with CB branches (in years). The findings are illustrated in the figure 4.3 below.

**Table 4.2: Working in the organization**

	Frequency	Percent
0 - 3 years	8	16.0
4 - 6 years	19	38.0
7 - 10 years	15	30.0
Over 10 years	8	16.0
<b>Total</b>	<b>50</b>	<b>100</b>

**Figure 4.2 Working in the organization**



Source: Survey data 2019

From the findings, it can be established that most of the staff works in average between 4 to 6 years with amounting up to 36% followed by 30% of the staff who is working at the organization between 7 to 10 years. “0-3 years” and “Over 10 years” have the same percentage of 16% and thus it can be drawn the conclusion that they could be familiar with the dynamics in their area.

### **4.3 Reliability of CBM Net System**

Staffs were requested to indicate their level of agreement with certain statements with regards to CBM Net system reliability in disbursing funds to beneficiaries or customers at CB Bank. Their responses were rated on a five point like scale where 1 = strongly disagree, 2 = disagree, 3 = Neutral, 4 = Agree and 5 = strongly agree. SPSS was used for generation of standard deviation and mean as illustrated in Table 4.3 below. A mean range of 1-3 would mean little influence while 3 -5 would mean great influence.

**Table 4.3: CBM Net system reliability**

Statement	Mean	Std. Dev.
CBM Net is highly compatible with other operating system used in the organization	3.6800	.58693
CBM Net has minimal downtime.	3.8200	.59556
CBM Net has rights system limitations for staff depending on their job descriptions	3.7800	.54548
Overall	3.76	

Source: Survey Data 2019

Based on the study findings, staffs normally agree that CBM Net is highly compatible with other operating system used in the organization (mean = 3.68), CBM Net has minimal downtime (mean = 3.82), that CBM Net has rights system limitations for staff depending on their job descriptions (mean = 3.78) and overall mean is 3.76. This indicates that CBM Net system is highly compatible with other operating systems used in the CB bank, CBM Net has very minimal downtime and the system has the right system limitation for staff's authority level.

#### **4.3.1 CBM Net system reliability and cost effectiveness**

The study sought to examine the extent to which CBM Net system reliability affect the cost effectiveness of the CB Bank. The study findings are shown in the Figure 4.4 below.

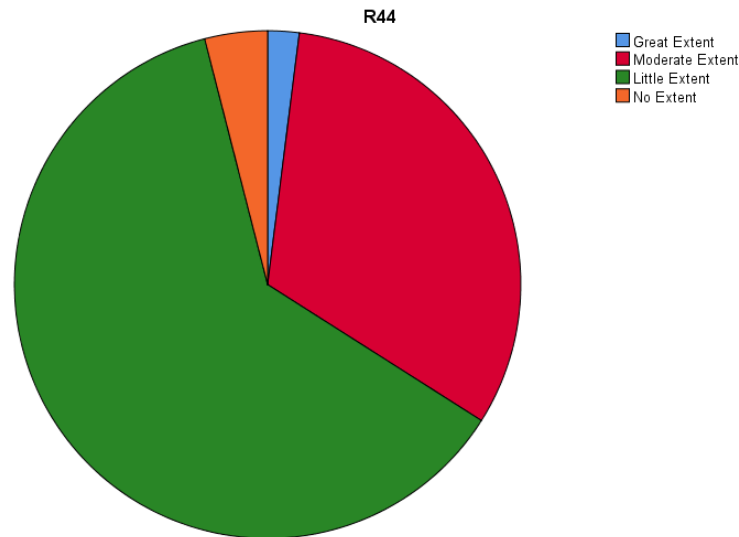
**Table 4.4 CBM Net system reliability on cost effectiveness.**

		Frequency	Percent
Valid	Very Great Extent	1	2.0
	Moderate Extent	16	32.0
	Little Extent	31	62.0
	No Extent	2	4.0
	Total	50	100.0

Source: Survey Data 2019



**Figure 4.3 CBM Net system reliability and cost effectiveness.**



Source: Survey Data 2019

From the study findings, majority of staffs about 62% believes that usage of CBM net system has little extent to the cost effectiveness of the bank while 32% were of the opinion that it has moderate extent to the cost effectiveness. Only 2% opine that the usage of the system has impacted on the cost effectiveness to the great extent while only 4% express that it has no extent at all. This is because, it effects the ratio of the bank and the cash deposit costing to the CBM is rather expensive.

#### **4.4 CBM Net System Infrastructure**

The study sought to determine staff's level of agreement with several statements on the CBM net system infrastructure in support of operations in the organization. Their responses were rated on a five point like scale where: 1 = strongly disagree, 2 = disagree, 3 = Neutral, 4 = Agree and 5 = strongly agree. SPSS was used for generation of standard deviation and mean as illustrated in Table 4.5 below.

**Table 4.5: CBM net infrastructure in support of operations.**

Statement	Mean	Std. Dev.
The organization has enough hardware to support CBM Net.	4.0200	.47337
The hardware is well maintained.	4.0400	.49322
The CBM net uses latest state of the technology.	3.5400	.57888
Overall	3.8666	

Source: Survey Data 2019

According to the study findings, staffs agree that the organization has enough hardware to support the CBM Net system (mean = 4.02), and that the CBM system hardware is well maintained (mean = 4.04), that CBM net uses the latest state of the technology (mean = 3.54) and overall mean is 3.8666. This implies that CB Bank has enough hardware to support the CBM net system and that the system is also well maintained.

#### **4.4.1 Influence of CBM net system infrastructure on cost effectiveness**

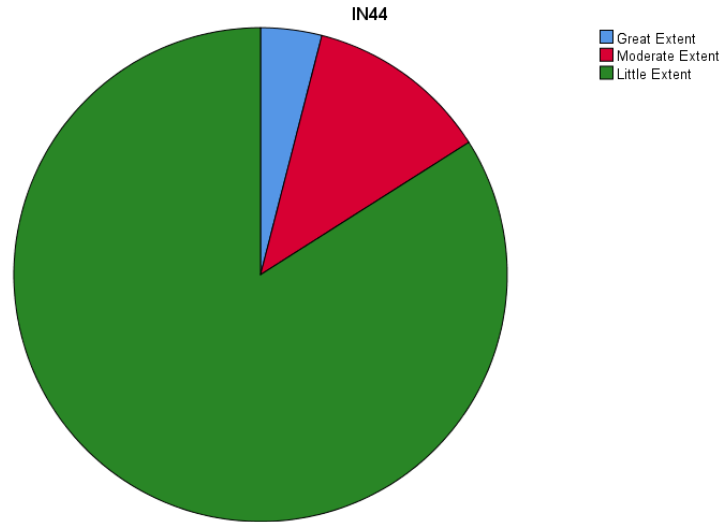
Staffs were kindly requested to indicate the extent to which CBM Net affect cost effectiveness of their organization. Study findings are as presented in Table 4.6 as below:

**Table 4.6: CBM net infrastructure on cost effectiveness.**

		Frequency	Percentage
Valid	Very Great Extent	2	4
	Moderate Extent	6	12
	Little Extent	42	84
	No Extent	0	0
	Total	50	100.0

Source: Survey Data 2019

**Figure 4.4 CBM Net infrastructure and cost effectiveness.**



Source: Survey data 2019

According to the findings, majority of the respondents 84% indicated that the CBM net infrastructure affect cost effectiveness of the bank to only a little extent, while 12% were of the opinion that it has moderate extent followed by 4% who thinks that the system has very great extent on the cost effectiveness of the organization.

#### **4.5 Staff Competency**

It was the interest of the researcher to determine the extent to which respondents agreed to several statements on effects of staff competency on CBM Net technology in use in their organization. Their responses were rated on five point like scale where: 1 = strongly disagree, 2 = disagree, 3 = Neutral, 4 = Agree and 5 = strongly agree. SPSS was used for generation of standard deviation and mean as illustrated in Table 4.7 below.

**Table 4.7: Effects of staff competency on CBM Net system**

<b>Statement</b>	<b>Mean</b>	<b>Std. Dev.</b>
The relevant bank staffs are conversant on how the CBM network in the bank.	3.8400	.58414
The staff understands different modules under the CBM Net system.	4.0400	.75485
Staffs are computer literate	3.9200	.85332
Staffs are been given relevant trainings from time to time.	3.5800	.70247
Overall	3.845	

Source: Survey data 2019

Based on the study findings, it has been agreed that relevant bank staffs are conversant on how the system works in the organization (mean = 3.84), the staff understand different modules under the CBM system (mean = 4.04), and the staffs are computer literate (mean = 3.92). In addition, respondents agreed that staffs are been given relevant trainings from time to time (mean = 3.58) and overall mean is 3.845. This portray that the relevant organizations staffs are conversant on how the CBM system works at the CB branch, the staff understands different modules in the system, and they are computer literate.

#### **4.5.1 Influence of Staff Competency on cost effectiveness**

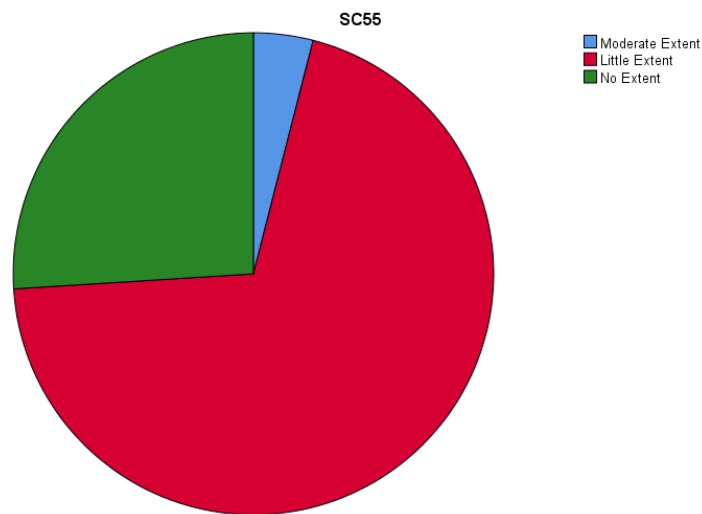
The study also was interested in establishing the extent to which staff competency affecting cost effectiveness at CB Bank. Study findings are presented in figure 4.6 as below.

**Table 4.8 Staff competency and cost effectiveness.**

		Frequency	Percentage
Valid	Very Great Extent	0	0
	Moderate Extent	2	4.0
	Little Extent	35	70.0
	No Extent	13	26.0
	Total	50	100.0

Source: Survey data 2019

**Figure 4.5 Staff competency and cost effectiveness.**



Source: Survey data 2019

According to the findings, majority of respondents, which is 70% of them, indicated that staff competency affecting cost effectiveness at CB Bank is only to little extent. 26% believes that they both have no extent at all and the staff competency does not affect cost effectiveness at CB Bank. This implies that staff competency does not have big impact on the cost effectiveness in the bank.

#### 4.6 Cost Effectiveness

The study sought to determine respondent's level of agreement with several statements on cost effectiveness in CB Bank following the adoption of CBM net system. Their responses were rated on five point like scale where: 1 = strongly disagree, 2 = disagree, 3 = Neutral, 4 = Agree and 5 = strongly agree. SPSS was used for generation of standard deviation and mean as illustrated in Table 4.9 below.

**Table 4.9: Effects of cost effectiveness on CBM Net system**

Statement	Mean	Std. Dev.
Use of CBM Net has improved timelines in payments.	4.3200	.47121
Use of CBM Net transfer has reduced paperwork involved in disbursing funds	3.9800	.51468
Use of CBM Net transfer has reduced time taken to carry out certain activities.	4.1800	.56025
Overall	4.16	

Source: Survey Data 2019

According to the findings, respondents strongly agreed that use of CBM net system has improved timeliness in payment (mean = 4.32) , use of CBM net system has reduced time taken to carry out certain activities (mean = 4.18), that the use of the system has also reduced paperwork involved in disbursing funds (mean = 3.98) and overall mean is 4.16. This implies that the use of the CBM net system has improved the overall payment system at the CB Bank.

**Table 4.10 Summary of overall mean for system reliability on cost effectiveness, CBM Net system infrastructure and Staff Competency**

Statement	Mean
CBM Net system reliability	3.76
CBM net infrastructure in support of operations	3.86

Effects of staff competency on CBM Net system	3.845
Effects of cost effectiveness on CBM Net system	4.16
Overall	3.90

Source: Survey Data 2019

#### 4.7 Analysis on Cost Effectiveness of CBM Net in CB Bank

**Table 4.11: Coefficient of Correlation**

Coefficients <sup>a</sup>						
Independent		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.392	.496		2.805	.007
	Reliability	.184	.094	.219	1.969	.045
	Infrastructure	.350	.160	.354	2.191	.034
	Staff Competency	.188	.107	.284	1.752	.047
Adjusted R Square		.463				
F value		13.194				

Dependent Variable: reduction in cost at CB Bank

Source: Survey Data 2019

The below equation explains the relationship between the independent and dependent variable. The purpose model for the study:

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3$$

Where; Y = Cost effectiveness

$\beta_0$  = Constant in the regression equation (intersection)

$\beta_1, \beta_2, \beta_3$  = regression coefficient (the slope of the regression)

$X_1$  = Reliability

$X_2 = \text{Infrastructure}$

$X_3 = \text{Staff Competency}$

Therefore, the regression equation is

$$\text{Cost Effectiveness} = 1.392 + 0.184X_1 + 0.350X_2 + 0.188X_3.$$

The study findings showed that there is a significant positive relationship between CBM net system reliability and reduction in cost in CB Bank (Beta = 0.184). Therefore, a unit increase in CBM system reliability leads to an increase in reduction in cost in CB Bank by 0.184. Results of the study showed that there is a significant positive relationship between use of CBM infrastructure and reduction in cost at CB Bank (Beta = 0.350). Therefore, a unit increase in use of CBM technology infrastructure would lead to reduction in cost at CB bank by 0.350. Results of the study showed that there is a significant positive relationship between staff competency and reduction in cost at CB Bank (Beta = 0.188). Therefore, a unit increases in staff competence would lead to an increase in reduction in cost at CB Bank by 0.188.

The study findings showed that there is a positive relationship between CBM Net system and reduction in cost at CB Bank. Results of the study showed that there is a slight positive relationship between staff competence and reduction in cost at CB Bank even though it is not significant. Results of the study showed that there is a significant positive relationship between use of CBM technology infrastructure and reduction in cost at CB Bank. In additions, the result showed that there is also a slight positive relationship between system reliability and reduction in cost at CB Bank.



# **CHAPTER V**

## **CONCLUSION**

This chapter presents the summary of research findings, suggestions, and needs for further research for cost effectiveness on payment and settlement system. It can be found that fund transfer using the payment and settlement system, CBM Net is slightly cost effective.

### **5.1 Finding**

The Central Bank of Myanmar put efforts to develop the financial infrastructure, however many challenges in improving the current payment, clearing and settlement system. The automated payments clearing system and electronic real-time settlement are required among the Central Bank of Myanmar and member banks. Based on finding, the payment, clearing, and settlement system is required to use by all the banks in interbank fund transfer effectively.

The study established that the payment and settlement system, CBM Net is highly compatible with other operating systems used in the organization, CBM Net has minimal downtime and CBM Net has rights system limitations for staff depending on their job description. Furthermore, the study showed CBM Net reliability affect the cost effectiveness of CB bank is little extent.

The CB bank has enough hardware to support CBM Net and the hardware is well maintained. Moreover, the study findings showed that CBM Net infrastructure is not really affected cost effectiveness of CB bank is little extent.

It was clear that the CB bank staff are conversant on how CBM Net works in the bank, the staff understands different modules under the CBM Net system and are computer literate and has been given relevant training from time to time. Addition, the study showed that staff competency is little extent which is not really affect the cost effectiveness thru CBM net. Furthermore, it was established that use of CBM

Net has improved timeliness in payment, transfer has reduced paperwork involved in disbursing funds and has reduced time taken to carry out certain activities.

## **5.2 Suggestion**

The Central Bank of Myanmar should encourage the banks to use CBM Net for interbank fund transfer and set the reasonable standard charges. Moreover, the current bilateral arrangement fund transfer method should be eliminated. Since there is alternative way which use for more than decades, most of the banks use the old model. Moreover, all local banks should implement centralized core banking system to be able to integrate with new payment system and it can reduce transaction time. The core banking system should be efficient and effective for countrywide payments. Furthermore, the Central Bank of Myanmar should consult with all the banks operates in Myanmar regularly for better systems and should have enough notice period for all the enhancements or changes.

In addition, cash transfer which mean account holder to non-account holder or non-account holder to non-account holder make payment at counters with NRC number, should be able to use widely among the banks thru CBM Net. Although transaction processing time is faster now than few years back, the faster payment system is required for better banking system. Most of the local banks offer mobile banking or internet banking. However, banks couldn't provide cross-bank fund transfer thru these two channels. Therefore, the customer either visit to branch or issue cheque for clearing and it caused inconvenience. As such all the banks should look at the fund transfer function for cross-bank transfer thru mobile banking or internet banking. Moreover, if the payment, settlement and clearing system (CBM Net) is able to integrate the other country's payment system, it would be great enhancement in payment system.

## **5.3 Needs for Further Study**

This study had studied the current payment, clearing and settlement system (CBM Net) and cost effectiveness in CB bank. This study limited in scope and not fully cover the whole payment, clearing and settlement systems in Myanmar. Due to some

constraint, not all the local private banks fully utilized the CBM Net system for interbank customer account transfer such as issue on reserve requirement ratio monitoring and time consuming to replenish the funds to account with CBM. Moreover, Central Bank will introduce CBM Net II in 2020 and will go live in 2021. Therefore, it is recommended to do further study on cost effectiveness on interbank fund transfer by using CBM Net minimum three years later.

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## Questionnaires

Dear Sir/Madam,

I am a student of the University of Economics conducting a research study as part of the requirements for the fulfillment of the award of a Master of Banking and Finance.

I kindly request you to response this questionnaire to facilitate the study about the cost effectiveness of CBM Net in CB bank. Your opinion will be highly confidential and will be used for academic purpose only.

### INSTRUCTIONS

Please tick the option of your choice in the spaces provided if needed.

### SECTION A: GENERAL INFORMATION

1. Your position in the bank
  - Senior Level Management
  - Mid-Level Management
  - Non-Managerial Level
  
2. How many years have you worked in the bank:
  - Below 3 years
  - 4-6 years
  - 7-10 years
  - Over 10 years:

### SECTION B: CBM NET RELIABILITY

3. The several statements on CBM Net reliability in disbursing funds to beneficiaries as below. Please indicate the extent of your agreement with each statement with regards to your bank. Use a scale of 1-5 where 1=Strongly disagree, 2= disagree, 3=Neither agree or disagree, 4=Agree and 5=Strongly agree

Statement	1	2	3	4	5
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CBM Net is highly compatible with other operating systems used in the bank					
CBM Net has minimal downtime					
CBM Net has rights system limitations for staff depending on their job descriptions					

4. What extent does CBM Net reliability affect the cost effectiveness of your bank?
- Very great extent
  - Great extent
  - Moderate extent
  - Little extent
  - No extent

**SECTION C: CBM Net INFRASTRUCTURE**

5. The several statements on CBM Net infrastructure in support of operations in your organization. Please indicate the extent of your agreement with each statement with regards to your bank. Use a scale of 1-5 where 1=Strongly disagree, 2= disagree, 3=Neither agree or disagree, 4=Agree and 5=Strongly agree

Statement	1	2	3	4	5
The organization has enough hardware to support CBM Net					
The hardware is well maintained					
The CBM Net uses latest state of the technology					

6. What extent has CBM Net infrastructure affected cost effectiveness of your bank?
- Very great extent
  - Great extent
  - Moderate extent

- Little extent
  - No extent
7. The several statements on effects of staff competency on CBM Net technology in use in your organization as below. Please indicate the extent of your agreement with each statement with regards to your bank. Use a scale of 1-5 where 1=Strongly disagree, 2= disagree, 3=Neither agree or disagree, 4=Agree and 5=Strongly agree

Statement	1	2	3	4	5
The relevant bank staff are conversant on how the CBM Net works in the bank					
The staff understands different modules under the CBM Net system					
Staff are computer literate					
Staff are been given relevant training from time to time					

8. What extent has staff competency affecting cost effectiveness in your bank?
- Very great extent
  - Great extent
  - Moderate extent
  - Little extent
  - No extent

**SECTION E: COST EFFECTIVENESS**

9. The several statements on cost effectiveness in the bank for adoption of CBM NET as below. Please indicate the extent of your agreement with each statement with regards to your bank. Use a scale of 1-5 where 1=Strongly disagree, 2= disagree, 3=Neither agree or disagree, 4=Agree and 5=Strongly agree

Statement	1	2	3	4	5
Use of CBM Net has improved timeliness in payments					
Use of CBM Net transfer has reduced paperwork involved in disbursing funds					
Use of CBM Net transfer has reduced time taken to carry out certain activities					