Roundtable Discussion Series 2023

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A Compilation of the Keynote Papers of the Roundtable Discussions of BIBM-2022

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Bangladesh Institute of Bank Management
Section-2, Mirpur, Dhaka-1216

Roundtable Discussion Series 2023

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Foreword

Bangladesh Institute of Bank Management (BIBM) organized four roundtable discussions on various banking related contemporary issues in 2022. Papers presented in these roundtable discussions have been compiled in this publication titled "Roundtable Discussion Series 2023". The keynote papers are prepared by research teams comprising of the faculty members of BIBM and experienced bankers from different banks. The research papers are finalized after accommodating the suggestions of discussants of the programs.

This Discussion Series would, we hope, attract attention of not only bankers, but also other professionals like credit analysts, economic consultants, economists, development practitioners as well as the academic community. BIBM would also welcome comments, critiques and suggestions on the themes contained in these research-based discussion papers.

Md. Akhtaruzzaman, Ph.D.
Director General, BIBM

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Paper One

Asset Management Company (AMC): A Way-Out to Solve NPL Problem in Bangladesh

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List of Abbreviations

ADB	Asian Development Bank
ADR	Alternative Dispute Resolution
AMC	Asset Management Company
APSs	Asset Protection Schemes
ARA	Artha Rin Adalat Ain
BB	Bangladesh Bank
BIAC	Bangladesh International Arbitration Center
BRC	Banking Reform Committee
CAMC	Centralised Asset Management Company
CBRC	China Bank Regulatory Commission
CIRC	The Corporate Industrial Restructuring Corp
CRGS	Credit Risk Grading Scoresheet
DRT	Debts Recovery Tribunals
FGD	Focus Group Discussion
FIs	Financial Institutions
FSC	Financial Supervisory Commission
FSRP	Financial Sector Reform Project
IBRA	Indonesian Bank Restructuring Agency
IRRBB	Interest Rate Risk in the Banking Book
KAMCO	Korean Asset Management Company
MLC	Money Loan Court
MOF	Ministry of Finance
MOFE	Ministry of Finance and Economy
MoU	Memorandum of Understanding
NAMA	National Asset Management Company
NARCL	National Asset Reconstruction Company Ltd
NPAs	Non-performing Assets
NPLs	Non-Performing Loans

PAMC	Public Asset Management Company
PBoC	People's Bank of China
PSBs	Public Sector Banks
RCC	Resolution and Collection Corporation
RTC	Resolution Trust Corporation
RTI	Right to Information
SCBs	State-Owned Commercial Banks
SRs	Security Receipts
TAMC	Thai Asset Management Company
UKAR	UK Asset Resolution Limited

Executive Summary

The financial sector of Bangladesh has been heavily burdened with a high and persistent level of Non-Performing Loans (NPLs) for a long period of time. Although the economy experienced a steady long-time decline of NPL from its ever-highest level of 41.1% in 1999 to its current level of 8.53% as of March 2022 (Bangladesh Bank), still it is high against the global standard of tolerance level of 2%-3%. The high percentage of bad loans is causing serious concern for the policymakers because it hampers the ability of banks and FIs to serve the prudent intermediation needs of the communities of a country like Bangladesh. NPL erodes credit supply, creates misallocation of credit, affects the credit cycle, de-motives bankers for lending further and drops market confidence. The increase of NPL in Bangladesh has reached such a degree that it demands a strong breakthrough intervention by the Government, regulator, and banks. Despite the several policy initiatives of Bangladesh Bank to reduce NPLs through restructuring, rescheduling, recovery, one-time exit and write-offs and the banks' efforts in reducing NPL like strengthening recovery units, arranging special recovery programs, and doing negotiation with borrowers, NPL problems are still pervasive in the banking sector of Bangladesh.

As part of the extended effort for enhancing bad loan recovery, the Government has recently planned to establish a Public Asset Management Company (PAMC) to buy distressed loans from banks. AMC is working in various countries with different degree of success. The main objective of this paper is to study the probable operational mechanisms and resolution strategies of AMC by focusing on PAMC[1] characterized by Government involvement at varying degrees.

The paper examines a number of pertinent issues relating to instituting AMC and its effective operation in different countries. The paper utilizes the opinions of the experts through an on-line based Focus Group Discussion (FGD) with 45 participants. Further, the information is collected through a questionnaire sent to the recovery division, special asset management department and write-off loan division of different banks. Opinions and information were also gathered from professional experts and available published sources. *The secondary data have been collected from different departments of BB like BRPD and DOS as well as*

[1] PAMC and AMC have been used interchangeably in many places in the paper.

from publications namely BB Quarterly, Annual reports of BB. A common accounting and statistical techniques have been applied for analysis.

The suggestions that came out from the analysis of cross-country evidence, responses got from the FGDs, questionnaires and the round table discussion are as follows:

(1) The choice of ownership and number of AMCs depend on factors like the magnitude of the problem, depth of markets, and characteristics of debtors. In Bangladesh, a substantial amount of bad loans has to be transferred to an AMC which entails the requirements of substantial amount of funds along with capability of AMC to penalize powerful and willful defaulters. In this consideration, a government-owned AMC will be a better option for Bangladesh to start with.

(2) Since the AMC is formed for specific, time-bound objectives to address a well-known problem, attempts might be made to commence the operations with regulations, and rules as detailed as possible to minimize the necessity of adding/modifying rules during its tenure. The regulatory responsibility may lie with the MOF and Bangladesh Bank may act as the supervisory authority.

(3) The board and management might be strong and independent enough to keep politics out of AMC's activities, resist pressure from borrowers and prospective purchasers of assets seeking preferential treatment, and run the organization as per written policies for the acquisition, pricing, and disposal of assets acquired. The directors and key management should be appointed from diverse fields such as financial sector regulators, bankers, lawyers, retired defense personnel, real estate specialists, liquidation experts, and people with insights into various industrial sectors.

(4) In the achievement of the goals of AMC, there should have independent internal control and compliance system including an internal audit that will give reasonable assurance relating to compliance of functions according to the approved policies and procedures.

(5) Government, central bank and public banks are usually the main financiers in PAMC. However, this may create an additional burden on the resource-constrained Government and its associated financial organizations. Government-guaranteed bonds can be issued for collecting funds. Further, the involvement of private banks and financial institutions, and the involvement of the share market in funding PAMC may reduce the pressure on the Government exchequer.

(6) In Bangladesh, a number of private commercial banks are also apprehended in loan default traps apart from SOCBs. The proposed PAMC may keep the options open to buy stressed assets from both SOCBs and PCBs. However, PAMC should fix the criteria for buying toxic assets regarding the sector, amount, quality, and organization so that banks will not suffer from moral hazard problems knowing that they have PAMC options if their loan becomes bad.

(7) Strategies of asset management and disposition might be guided by the goal of maximizing the value of assets considering market conditions as well as the funding cost of the AMC. An online market might be created to dispose of the assets acquired so that anyone from home and abroad desiring to participate can join in the bidding process. Further, state-of-the-art mechanisms used by AMC globally like equity SWAPs, securitization, and tying up with overseas investors to bid for assets are required to be made available in Bangladesh too.

(8) Realistic pricing of assets based on market value, sound accounting norms, loan classification and provisioning standards, and/or discounted present values, is sine-qua-non for the success of AMCs. If the loan is transferred at a higher price, the profitability of AMC will be hampered. In contrast, transferring NPL at a lower price will deprive banks of getting the financial gains that they usually expect.

(9) PAMC should be given special power to acquire, purchase, hold, manage, restructure, rehabilitate, sell, and dispose of NPAs. AMC should have the magisterial power to supersede the Money Loan Court Act, impose restrictions on the mobility of the borrower, and even arrest the borrower. Before issuing a stay order, the court may be required to hear the views of the AMC. Access to information from Bangladesh Bank, NBR, Land Office, DSE, and CSE is also necessary.

Asset Management Company: A Way-out to Solve NPL Problems in Bangladesh

1.1 Introduction

The financial sector of Bangladesh has been heavily burdened with a large volume of Non-Performing Loans (NPLs). The Covid pandemic and the current war in Ukraine have added additional agony to the extant situation of NPLs. The spiraled growth of toxic assets has caused serious concern for economists and financial leaders because it impedes the ability of banks and FIs to serve the prudent intermediation needs of the communities of a country like Bangladesh. NPL erodes credit supply, creates misallocation of credit, affects the credit cycle, de-motives bankers for lending further and drops market confidence. As a result, NPLs have emerged as one of the most serious concerns in the path of the economic development of Bangladesh. Alamgir (2015) opines that Bangladesh is caught in a loan default trap which the country must escape in order to realize the political vision of a developed country by 2041. Banerjee et.al (2021) state that the increase in NPL[2] in Bangladesh has reached such a degree that it demands a strong breakthrough intervention by the Government, regulator and banks.

Bangladesh Bank (BB) has taken several policy initiatives to reduce NPLs through restructuring, rescheduling, recovery, one-time exit and write-offs. Banks are also highly watchful about NPLs and persistently undertaking various measures like strengthening recovery units, arranging special recovery programs, and doing negotiation with borrowers. The Government has enacted different laws like Money Loan Court, Public Demands

[2] Non-Performing Loan (NPL) consists of three categories of loan viz. substandard, doubtful, and bad. A definitional difference is observed between NPL and Default loans. A loan turns out to be default if the length of overdue of a loan is 6 month or more. As per the criteria given by Bangladesh Bank all doubtful and bad loan belong to the default category. But, the case of Substandard (SS) is little bit complicated. Any loan having a length of overdue between 3 to 9 months is treated as substandard. So, not all SS loan will be considered as default loan. For example, a loan having 4-month overdue period will be NPL but not default. On the other, a loan having 7 month overdue period will be NPL as well as default.

Recovery Act, etc. to get rid of this burning problem. However, NPLs problems are still pervasive and all measures fail to stop its upward growth.

To resolve NPLs problems and help restore the health and confidence of the financial sector, the Banking Reform Committee (BRC) established in 1996 suggested examining the viability of forming an Asset Management Company (AMC)[3]. A six-member committee formed in early 2019 comprising of the Ministry of Finance and Bangladesh Bank also prescribed forming of an AMC and other measures like the creation of a secondary market for NPL, setting up a separate data warehouse for NPLs under the existing facilities of the Credit Information Bureau of the Bangladesh Bank, and a tax rebate facility for traders of the default loans for lessening NPLs

Recently, the Government has intended to form a Public Asset Management Company (PAMC) to buy distressed loans from banks. A special law is reportedly being prepared to empower the PAMC to purchase NPLs from banks and afterwards to restructure and sell them to individuals or corporate entities.

The main objective of this paper is to see the operation mechanisms and resolution strategies of AMC by focusing on PAMC[4] characterized by Government involvement at varying degrees.

1.2. Methodology

A conflicting view about the effectiveness of PAMC has already been noticed in the financial sector of Bangladesh. While a segment of financial experts welcomes PAMC as a panacea for solving all NPL problems, others are skeptical in equal measure. This contradiction indicates that a trade-off is necessary to establish PAMC. This situation motivates researchers to analyze cross-country practices to know the characteristics which have contributed PAMC to be succeeded. To substantiate the cross-country experiences, opinions of the local experts have also been collected by

[3] The term AMC is used here to refer any organizational unit created to manage and recover financial assets from troubled or failed financial institutions. Such entities include asset workout departments or units of banks, bank-owned subsidiaries or affiliated companies, private companies, and Government owned asset management companies. AMC is also called bad bank in many countries.
[4] PAMC and AMC have been used interchangeably in many places in the paper.

arranging an on-line based Focus Group Discussion (FGD) with 45 participants and sending a questionnaire to the recovery division, special asset management department and write-off loan division of different banks. In addition, opinions and information were gathered from professional experts and available published sources. *The secondary data have been collected from different departments of BB like BRPD and DOS as well as from publications like BB Quarterly, Annual Report of BB and Financial Stability Report of BB. Publications of the Asian Development Bank were also considered in this respect. A number of accounting and financial techniques have been applied in analyzing data. A keynote paper was presented in a roundtable. Finally, the study paper has been prepared by incorporating the comments and opinions from the participants of the roundtable discussion.*

1.3. Literature Review

The performance of various recovery channels of NPAs including AMC has been studied by a number of researchers. Mesnard *et al.* (2016) examined various kinds of measures to address the issue of non-performing loans which are- transferring NPL to dedicated bad banks, developing a secondary market for NPL, strengthening insolvency frameworks, as well as enhancing supervisory work on loss recognition and troubled assets management and amending tax rules. Under transferring NPL to dedicated bad banks measure[5] there are three other sub-measures of the recovery system namely, system-wide bad banks, state guarantees on asset portfolios ("asset protection schemes") and system-wide state aid-free mechanisms.

As opined by Dey (2018), the performance of various recovery channels of NPAs in the Indian banking system is not satisfactory where improper due diligence, insufficient law to combat defaulters, and externalities of macro-economic variables may be the main cause of weak recovery mechanism process. He analyzed this recovery mechanism of NPAs with its three

[5] Bad Banks (BBs) were first used in the late 1980s and early 1990s in the United States (Resolution Trust Corporation) and in Sweden (Securum) to resolve problems at banks with persistently high stocks of impaired assets. BBs were also used during the Asian crisis in the late 1990s (Korea, Malaysia, Indonesia), and more recently in Turkey and Nigeria.

important wings which are- recovery through Lok Adalat, Debts Recovery Tribunals (DRT) and The Securitisation and Reconstruction of Financial Assets and Enforcement of Securities Interest Act, 2002 (SARFASEI) and its impact on NPA covering the years from 2003-04 to 2016-17. The Act provides three alternative methods for recovery of non-performing assets, viz; securitization, asset reconstruction and enforcement of security without the intervention of the court.

Considering the time factor, Luvsannyam *et al.* (2021) found that the time required to recover a Non-Performing Loan (NPL) in Mongolia varies, depending on the solving methods. For example, it takes an average of 6.2 years to resolve a court case, while a non-judicial process takes twice as short, 3.4 years. They also considered banking registration software as one of the key factors in differentiating recovery periods of NPL. As there is a deadly mix between market failures and banks' resolutions and recoveries, State-supported schemes are necessary to favour a rapid and smooth recovery of the banking sector. In the case of involving an Asset Management Company (AMC) in recovering process, it should have a clear primary mandate to maximize the recovery values of NPLs on a commercial basis. Moreover, it should be permitted to use any relevant legal tool or devise a strategy to achieve its goals, irrespective of political or vested interests (Navaretti et al. 2017). To strengthen the loan portfolio and initiate more dynamic lending activity in the banking sector, a project called Podgorica Approach[6] aimed at strengthening the financial stability of the system, supporting debtors' recovery, and improving economic growth (Stijepović, 2014). Khan (2000) pointed out that banks and financial institutions could convert part of the NPA debt into equity of the defaulting company as a recovery strategy. Prakash (2011) stated two loan recovery techniques applied in India. For instance, the Bank of India has sought the services of retired staffers to bolster its recovery efforts and the commission payable to outside recovery agents is paid to these ex-staffers.

[6] Podgorica Approach contributed, in particular, to quantitative assessment of the recovery of non-performing loans which could return to the performing status through the restructuring process. A better qualitative understanding of these loans is necessary to act preventively and thus largely reduce migration from performing to non-performing loans.

In Bangladesh, several studies have been conducted to look into the problems of NPL, recovery measures adopted by banks, costs associated with the measures taken, successes thereof, etc. Dey (2018) found that NPL recoveries witnessed significant improvements after 1999, as the NPL ratio steadily decreased to 6.1% in 2011 due to written-off loans and a sharp decline in new bad debt. Aside from stronger regulation, greater legal powers of the banks to recover problem loans through the money loan courts and better screening of new loans by the Credit Information Bureau also contributed. Ahmed (2020) found that the rapid transformation of the banking sector from public-dominated banking to private-led banking has reduced the overall risk of the banking sector by sharply lowering the share of the loan portfolio of public banks. Though this is a positive development that has helped lower the overall NPL ratio for the banking sector as a whole, the total value of NPLs is a considerable source of concern in absolute taka terms.

In an attempt to identify the appropriate approach to using different measures taken by banks for managing NPL, Islam *et al.* (2014) argued that the strategy of addressing the NPL problem must be concerned with how to arrest fresh NPLs as well as recover existing NPLs. Siddique *et al.* (2015) found that it is very vital to apply non-legal measures before disbursing the loan e.g., informing the family members about the issue of availing credit facility from banks, which may ensure a smooth recovery from the very beginning of the loan. They have mentioned some of the out-of-the court-based measures e.g., constant persuasion, Alternative Dispute Resolution (ADR) under Money Loan Court (MLC), yearly action plan for recovery, involving external recovery agents, incentives for recovery, creating social pressure, etc. as effective measures to recover problem loans.

1.4. Organization of the Paper

After introducing the research topic in Section-1 covering methodology, organization of the paper and literature review, Section-2 states the NPL situation and its recovery mechanism in Bangladesh. Section-3 presents major measures undertaken to reduce nonperforming loans in Bangladesh (1986-2022). The concept, evolution, advantage, and challenges of

centralized AMC are placed in Section-4. Section-5 describes cross-country experiences. Section-6 reports and analyses the opinion of the respondents. Section-7 puts forward a number of possible policy suggestions, which have been finalized by accommodating the issues raised in the round table discussion.

2. NPL Situation and Its Recovery Mechanism in Bangladesh

2.1 NPL in Bangladesh: Dimension and Trend

High and persistent level of NPL is a perennial problem in the banking sector of Bangladesh. Although the economy experienced a steady long-time decline of NPL from its ever-highest level of 41.1% in 1999 to its current level of 8.53% as of March, 2022 (Bangladesh Bank), still it is high against the global standard of tolerance level of 2%-3%. Table 2.1 presents the bank category-wise NPL movement from 2010 to March 2022. One striking feature is that per cent of NPL is hovering around 9%-10% since 2012 despite various measures adopted by the regulatory body along with the enhanced risk management capacity of the banks. Regulation allowing the banks to keep their NPL at the end of 2019 level for most of the pandemic period might not show the real level of NPL published in recent years. In general, the NPL of state-owned banks (SCBs and SBs) remains at a noticeably higher level than the other group of private owned banks which, however, part of it can be attributed to the higher level of involvement of the SCBs than the PCBs in the priority sector lending such as rural and agricultural financing. The movement in NPL should be interpreted carefully as the amount of NPL is sensitive to the definition of NPL, the volume of rescheduling, writing off, and some other cosmetic arrangement applied for the reduction of NPL. For example, loan rescheduling in our banking industry, unlike the global standard, brings a non-performing loan to the regular category which contributes to lowering the number of bad assets.

Table 2.1: Dimension and Trend of Bank Group-wise NPL (2010-2022)

Bank Group	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (March)
SCBs	15.7	11.3	23.9	19.8	22.23	21.46	25.1	26.5	30.0	23.9	22.7	19.28	20.01
SBs	24.2	24.6	26.8	26.8	32.81	23.24	26	23.4	19.5	15.1	15.9	12.02	12.01
PCBS	3.2	2.9	4.6	4.5	4.98	4.85	4.58	4.87	5.5	5.8	5.9	5.31	5.84
FCBs	3	3	3.5	5.5	7.3	7.77	9.56	7.04	6.5	5.7	5.5	4.29	4.53
Total	7.3	6.1	10.0	8.9	9.69	8.79	9.23	9.31	10.3	9.3	9.2	7.93	8.53

Sources: Bangladesh Bank. 1. Annual Reports 2. Bangladesh Bank Quarterly

2.2 NPL in Bangladesh: Number of Banks by Percent of NPL and Share of NPL in Top 3, 5, and 10 Banks

The distribution of NPL among the banks is widely varied as shown in Table 2.2. About 65% banks lies below less than 5% NPL category while 15% banks go into more than 20% NPL category. Four banks are in dire situation with having more than 50% of loan in NPL category. The concentration of NPL among few banks is still significant as top 3, 5, and 10 banks' NPL constitute 35.89%, 44.3%, and 63.1% respectively (Table-2.3) even after concentration is being reduced gradually. So, a high standard deviation in the percentage of NPL both among and within the same category of banks suggests that the problem is not predominantly a systemic one.

Table 2.2: Number of Banks by Percentage of NPL (31 December 2020)

Percentage of NPL	Number of Banks
Less than 2%	11
2% to <3%	11
3% to <5%	16
5% to <10%	6
10% to <15%	5
15% to <20%	1
20% to <25%	2
25% to <50%	3
50% & Above	4
Total	59

Source: Researchers Compilation from data of BRPD, BB

Table 2.3: Share of NPL in Top 3, 5, and 10 Banks (% of Total NPL)

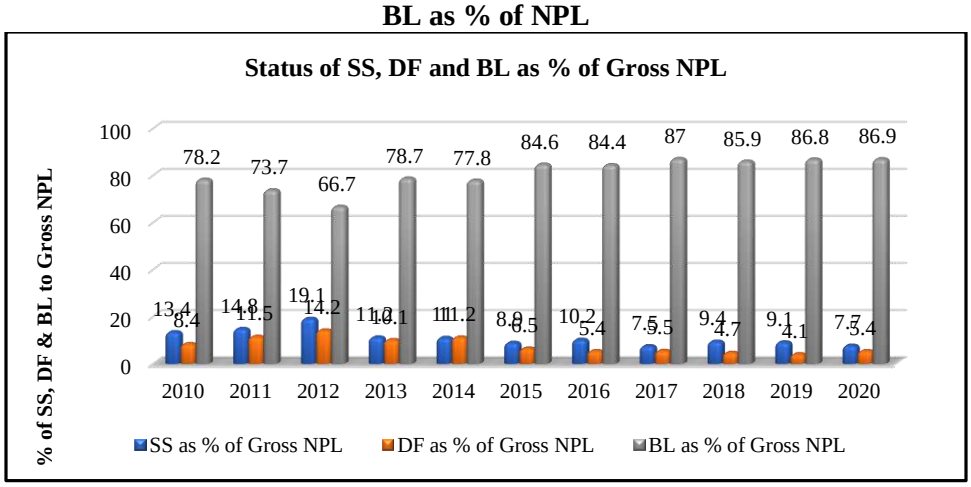
Year	Top 3 Banks	Top 5 banks	Top 10 banks
2010	52.33	63.10	76.39
2011	50.66	60.95	72.8
2012	50.51	62.72	73.21
2013	44.28	54.50	67.4
2014	39.69	53.60	67.4
2015	36.43	49.90	63.5
2016	37.53	51.80	65.9
2017	36.59	49.20	65.5
2018	40.38	50.90	66
2019	34.81	45.80	63.3
2020	35.89	44.30	63.1

Source: Financial Stability Reports and BRPD, BB

2.3 NPL in Bangladesh: Status of SS, DF, and Bad Loan

One more alarming aspect in the banking industry is the high concentration of NPL in the 'bad 'category as shown in Figure-2.1. As a bad loan is not likely to be paid back from the business, having 85% in that category for a long period of time poses a great threat to the bank management for recovery of such a high amount of bad loan, especially in an environment with weak enforcement status of legal recovery.

Figure 2.1: Dimension and Trend of NPL: Status of SS, DF and BL as % of NPL



Source: Bangladesh Bank. Financial Stability Reports.

2.4 NPL Recovery: Regulatory Measures

Prevention of NPL and its recovery measures have been dealt with by the Bangladesh Bank with a number of regulatory guidelines, policies and enhanced supervisory functions since the beginning of the problem in the 90's with active engagement on the part of the commercial banks through using better NPL resolving tools and ensuring compliance with the laid down rules and procedures. NPL recovery measures at the operational level/functional level mainly are of two types- regulatory/non-legal and legal measures through filing suits in the debt recovery-related courts.[7] Regulatory measures mainly include loan rescheduling; persuasion and/or creating pressure through relatives, guarantors, business associates; negotiation with the borrower either by the bank or third party like BIAC; ADR under Artha Rin Adalat Ain, 2003; interest waiver; external recovery agents; debt-equity swap; motivating recovery staffs through objective key performance indicators; corporate restructuring; selling a bad asset to an asset management company, and write off. In the context of the banking sector of Bangladesh, other than negotiation with the borrower, the most widely used regulatory measures are loan rescheduling and write-offs. Legal measures for loan recovery or debt recovery-related Acts mainly include Artha Rin Adalat Ain 2003, Public Demands Recovery Act, 1913, and The Bankruptcy Act,1997 of which the ARA Act is the most suitable and relevant one for the banks to fall upon as legal measures for recovery.

2.4.1 Rescheduling of Loans

Rescheduling of loans, ideally, should be used in a conservative way to ensure the recovery of NPL in a situation where there arises an unavoidable estimation gap between the predicted business outcome and the actual business performance of the borrower. But, Banerjee et al. (2021) in a study on the banking sector of Bangladesh found that about 99% of total requested cases have been accepted for loan rescheduling during 2016-2020. The percentage of more than first-time rescheduling in total rescheduled cases

[7] All the attempts or measures taken by bank to recover non-performing loan other than settlement through the verdict of the court may be termed as regulatory/outside the court settlement process/ non-legal measures for loan recovery.

was in between 30% and 40% during 2016-2020, which gives the evidence of liberal use of rescheduling in our banking sector. Chowdhury et al. (2017) found evidence of allowing rescheduling facility to one every out of five loans in a year during their study period. As a defaulted loan becomes regular after it is rescheduled, unlike the international best practice, it is probable that some incentives on the part of the bank management will be created in favour of rescheduling in order to reduce the NPL amount. These distortions in incentives of the bank coupled with the natural preference of the borrower to get a rescheduling facility result in too many cases of rescheduling. The trend of loan rescheduling in the banking industry is seen in the following table. The trend is upward except for the year 2020 due to permission given to the banks to keep maintaining their loan classification status at the pre-Covid period.

Table 2.4: Trend of Loan Rescheduling

Year	Rescheduled Amount (in Billion Tk.)	Rescheduled Loan to Outstanding Loan
2016	154.2	8.0
2017	191.2	7.1
2018	232.1	7.5
2019	527.7	11.2
2020	134.7	11.8

Source: Bangladesh bank. Financial Stability Report.

2.4.2 Write-off of Loan

The write-off is another NPL recovery tool that was introduced in 2003 by the regulatory authority.[8] The amount of written-off loans stood at Tk.568.45 billion till December 2020 which equals 3.1 per cent of the banking sector's on-balance sheet assets at the end-December 2020. However, write off has not yet appeared as an effective recovery measure in our banking system, as only 22% (Tk. 126.9 billion) of total written-offs have been recovered by the banks till December 2020 (Financial Stability Report, BB).

[8] Giving the responsibility of recovery a long-lasting bad loan to a dedicated unit after it is removed from the bank's book backed by 100% provision and a legal suit is known as write off that ideally improves the recovery prospect of a distressed loan.

Banerjee et al. (2021) studied the effectiveness of NPL recovery measures by taking a sample of 30 commercial banks, which found 70% share of large loans in total written-off loans during 2015-2020. Written off by the PCBs was the highest (51%), followed by SCBs (46%). The percentage of the number of written-off loans remaining unsettled for 5 years or more was as high as 73 per cent, giving evidence of the time-consuming nature of recovery after the loan is written off. Also, the ratio of the recovered amount to write-off decreases with the increase in the size of the loan, which points to the difficulty in dealing with large loans in our banking industry. The effectiveness of write-off as a recovery measure is not observed as the recovered amount to write-off amount remained below 10%, except for the PCBs in 2010 and 2017. The performance of PCBs was markedly higher than the SOCBs in getting write-off loans recovered.

2.4.3 Negotiation & Mediation

In general, the outside court settlement process that includes negotiation, and mediation both before and after filing the suit and ADR under ARA Act, 2003 did not prove as strong NPL recovery measures, at least for a large loan in our industry. Engaging third parties like Bangladesh International Arbitration Center (BIAC) by the banks in the negotiation process with the borrowers is rarely practiced in our banking industry.[9] BIAC has so far signed a Memorandum of Understanding (MoU) with 10 scheduled banks for referring cases, out of which only four banks so far have referred cases for mediation to BIAC (Banerjee et al., 2021).

2.5. NPL Recovery: Legal Measures

2.5.1 Legal Measures: Amount Claimed, Settled, and Recovered under MLC, PDR, and BA (Tk.in crore)

Enforcement status of existing debt recovery related Acts in the backdrop of limited use of outside court settlement process is vital for relieving the banks from the accumulated default loan. However, recovery of default

[9] Bangladesh International Arbitration Center (BIAC), the country's first and only government-licensed institution for Alternative Dispute Resolution (ADR)/ OCS, was established in 2004 with assistance from three business Chambers-- International Chamber of Commerce, Bangladesh, Dhaka Chamber of Commerce and Industry and Metropolitan Chamber of Commerce and Industry, Dhaka.

loans through legal measures is usually expensive, time-consuming and unpleasant (Siddique et. al., 2015). The amount claimed, settled, and recovered up to December 2020 under Artha Rin Adalat Ain (ARA) 2003, Public Demands Recovery (PDR) Act,1913, and Bankruptcy Act (BA),1997 indicate that the legal recovery mainly depends on The ARA Ain with a share of 97.48%, 93.59%, 91.96% in total claimed, settled, and recovered amount respectively (Table-2.5).

Table 2.5: Amount Claimed, Settled, and Recovered under MLC, PDR, and BA* (Tk. in Crore)

Act name	Amount Claimed	Amount Settled	Amount Recovered
MLC	190673.34 (97.48)	56908.63 (93.59)	18896.51 (91.96)
PDR	2205.54 (1.13)	1687.99 (2.78)	1239.28 (6.03)
BA	2732.99 (1.40)	2209.05 (3.63)	413.81 (2.01)
Total	195611.87 (100.00)	60805.67 (100.00)	20549.60 (100.00)

Source: Bangladesh Bank. and Banerjee et al. (2021).
Note: *Figure in parenthesis represents share in total

2.5.2 Legal Measures: Rate of Settlement under the Artha Rin Adalat Ain (ARA), 2003 and Recovery thereof

The percentage of settled cases as well as amount and recovery amount in the banking industry under ARA during the period 2015 – 2020 is given in Table-2.6. The percentage of settled cases remained similar at around 67% during the period. The rate of settlement amount remained at a low level i.e. below 30% with a slight variation across the years under consideration. What ultimately matters to assess the strength of the legal measures is the percentage of the recovered amount, which is shown in the last column of the table. After witnessing around 50% recovery out of the settled amount in the first three reported years, the recovery rate noticeably declined in 2020 with a rate of 33.21%. So, as a whole, the enforcement status of the ARA, which the bank relies on for legal recovery does not still yield an expeditious recovery process.

Table 2.6: Rate of Settlement under the Artha Rin Adalat Ain (ARA), 2003 and Recovery Thereof

Year	% of Settled Cases (Of case filed)	% of Settled Amount (Of Claimed amount)	% of Recovered Amount (Of Settled Amount)
2015	67.69	29.89	50.25
2016	66.20	28.03	49.19
2017	66.11	25.86	49.52
2018	65.86	25.32	45.22
2019	66.26	27.10	38.87
2020	67.32	29.85	33.21

Source: Bangladesh Bank and Banerjee et al (2021).

Maintaining a tolerance level of NPL depends on preventing a loan from becoming NPL and recovery of accumulated NPL. The limitations in the banks' internal capacity to recover bad assets and the weaknesses in the enforcement status of debt recovery-related Acts are observed by different researchers, policymakers and practitioners. They support the importance of instituting an Asset Management Company backed by the law that may improve the NPL recovery position in a focused way within a reasonable period of time and allow the banks to contribute more to the economy by giving more attention to the new loans rather than struggling with the age-old distressed loan.

3. Major Measures Undertaken to Reduce Non-Performing Loans in Bangladesh (1986-2022)

Undertaking measures to reduce NPL and reforming the financial sector in Bangladesh may be traced back to the formation of the Money, Banking and Credit Commission in the mid-1980s. The report of this commission suggested administrative and legal measures for solving NPL problems which later on motivated the Government and BB to undertake two notable initiatives in the 1990s like Financial Sector Reform Project (FSRP) in 1990 and the Banking Reform Committee (BRC) in 1996 for bringing discipline in the lending culture of Bangladesh. Enactment of different laws and regulations, concrete loan recovery policy of State-Owned Commercial Banks (SCBs) and proposal for setting up an Asset Management Company (AMC) were the notable outcomes of aforesaid measures (Table-3.1).

Afterwards, the review initiative on the Structural Adjustment Performance in 2000, introducing the Credit Risk Grading Scoresheet (CRGS) manual in 2005 and corporatizing SCBs were the major initiatives undertaken in the 2000s for setting up new loan screening and monitoring standards and ensuring accountability in banks. In the 2010s, significant initiatives like introducing new loan classification and provisioning rules in the line with international standards, placing observers on the board of banks with worsening internal governance, restructuring large loans, and introducing the Internal Credit Risk Rating System (ICRRs) were undertaken by BB. Afterwards, to address the business slowdown caused by COVID-19 and Ukraine war, and ensure the collection of instalments within the given time, steps like the relaxation of loan classification policy, flexibility in fixing instalments, adoption of a guideline on Interest Rate Risk in the Banking Book (IRRBB), etc. have been initiated by BB.

Table 3.1: Major Measures Undertaken to Reduce Non-Performing Loans in Bangladesh: 1986-2020

1986	1990	1996	2000	2003
National Commission on Money, banking and Credit: • Setting of recovery targets for SCBs and DFIs. • Prohibiting defaulters from access to further credit. • Linking loan recovery measures with the central bank.	Financial Sector Reform Project: • Enacting new laws, regulations, and instruments (such as, Financial Loan Court Act, 1990 and Bankruptcy Act, 1997). • Fixing collection targets and resolution of legal cases for the 100 largest defaulters. • Publishing list of 100 largest defaulters in different media.	Banking Reform Committee: • Formulating recovery cells and camps in SCBs. • Introduction of incentives to bank officials for recovery.	Structural Adjustment Performance Review Initiative: • Improving the central bank's supervision and regulation. • Central bank's instructions to banks to maintain 9% ratio of capital adequacy to risk-weighted assets, with core capital at least 4.5%. • Making provision to appoint two directors from the depositors in the bank board.	• Enacting the Money Loan Court Act 2003 and the Bank Company (Amendment) Act 2003 for quick settlement of filed cases.

2005	2007	2012	2013	2014
Credit Risk Grading (CRG) Manual: • Making CRG system mandatory from 2006 to prevent fresh NPLs.	• Corporatizing SCBs. • Transfer of regulatory authority of SCBs from the Ministry of Finance to the Bangladesh Bank. • Raising the minimum capital adequacy ratio from 9 to 10.	Revision of loan classification and provisioning: • Tightening loan classification to bring it more in line with international practices. • Tightening of definition and delinquency periods for fixed-term loans.	• Amending the Bank Company Act, giving Bangladesh Bank authority to remove the Managing Director of the SCBs. • Special diagnostic examination of SCBs by Bangladesh Bank. • Signing by SCBs revised MoU with Bangladesh Bank with quantitative targets, including reduction of NPLs, limits on the growth of their lending portfolio, and recovery from the largest defaulters.	• Automation of bank branches by end-2016 in financial reporting.
2015	**2019**	**2020**	**2021 -2022**	
• Placing observers in the board of banks with worsening internal governance. • Restructuring of large loans above Tk. 5 billion. • Signing by SCBs annual performance agreement with the	• Launching Internal Credit Risk Rating System (ICRRS) effective 1 July 2019. • Forming 'Special Monetary Cell' headed by Deputy Managing Director (DMD) in all scheduled banks to monitor classified loans	• Relaxation of loan classification policy to address business slowdown caused by the coronavirus pandemic. • Discussion on Asset Management Company for NPL problems.	• Flexibility in fixing instalment • Adoption of Guideline on Interest Rate Risk in the Banking Book (IRRBB)	

Ministry of Finance to reinforce good practices.	amounting Tk. 100 crore and above. • Easing loan classification and provisioning rules effective on30 June 2019			

Source: Managing Non-Performing Loan in Bangladesh, Asian Development Bank (ADB) Briefs, No. 116, November 2019/ Bangladesh Bank Circular/ BIBM publications.

4. NPL Resolution and Asset Management Company: Concept, Development, Advantage and Challenges

4.1 NPL Resolution & Asset Management Company

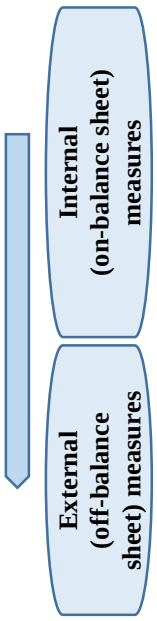
4.1.1 NPL Resolution Approaches: On-balance Sheet and Off-balance Sheet

The solutions available to banks dealing with NPLs are quite broad. It ranges from on-balance sheet measures such as the establishment of internal workout units by the originating bank to off-balance sheet[10] measures such as the disposal of assets through direct sales to investors (Figure-4.1).

Approaches to NPL resolution placed in the above figure allow a more comprehensive yet country-specific approach to dealing with NPL problems including Asset Protection Schemes (APSs), securitization, and the creation of Asset Management Companies (AMCs). However, the characteristics of a country's economic and banking structure, the type of bad assets, fiscal space for use of the public fund, and legal & judicial environments help select the optimal option of NPL resolution which is likely to differ among countries.

[10] In an on-balance sheet measures, bad assets are placed in a separate internal unit of banks. This step raises bank's transparency and showcases the commitment to clean its balance sheet. The off-balance sheet measures, on the other hand, can take the form of a special-purpose entity structure, where bad assets are offloaded, securitised, and sold to different investors.

Figure 4.1: Elements of a Comprehensive Approach to NPL Resolution



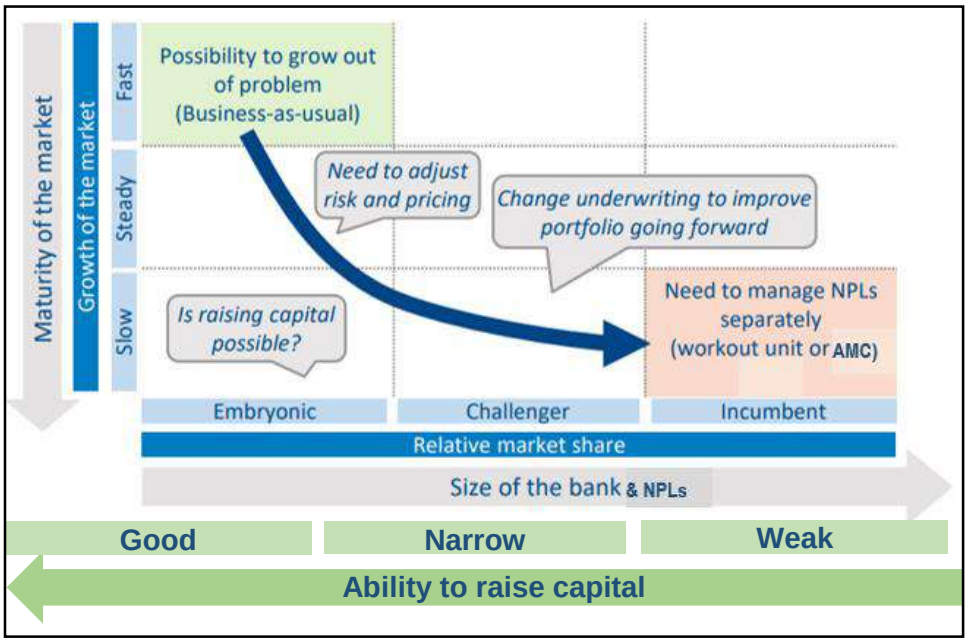
Internal Workout/ Restructuring Unit	Bank introduces various restructuring options for high-risk assets to prevent defaults. The bank can also try to accelerate recovery by actively "managing down" the assets themselves. It can, for example, forfeit closeouts, offer discounts, or terminate contracts if, say, covenants have been broken.
Asset Protection Scheme	Risk-sharing agreement to limit further losses, state-backed entities offer insurance on loss on NPLs to restart the bank's credit provision.
Securitization & Synthetic Securitisation	Banks, SPVs or AMCs pool & tranche loans and sell securitized products in dedicated markets. Co-investment structures where the state co-invests with NPL investors are particularly effective in the context of securitisation.
Centralised Asset Management Company	A legally, operationally, and financially separated entity into which NPLs are offloaded.
NPL Trading Platforms	It may act as a central hub for NPL sales by being a central repository for NPL data from participating banks. Investors able to build their own NPL portions from multiple banks.
Direct Sale	The asset is sold directly to investors, provided there are sufficiently liquid dedicated markets.

Source: Fell et al. (2017)

4.1.2 NPL Strategic Assessment Matrix

The NPL strategic assessment matrix guides decision-making for the NPL resolution. A number of aspects are the prerequisites for setting appropriate options. These are 1) Size of the problem: the NPLs as a percentage of the bank's total balance sheet; 2) Market share: the bank's share in the banking market (embryonic, challenger, incumbent); 3) Ability to raise capital: capability of bank to raise capital from existing or new shareholders to fund growth (good, narrow, weak); 4) Maturity, growth & dynamics of the market: the expectation of the growth of the bank's balance sheet in the years to come. Consolidation and sophistication of the market (slow, steady, or fast).

Figure 4.2: NPL Strategic Assessment Matrix



Source: De Backer (2021)

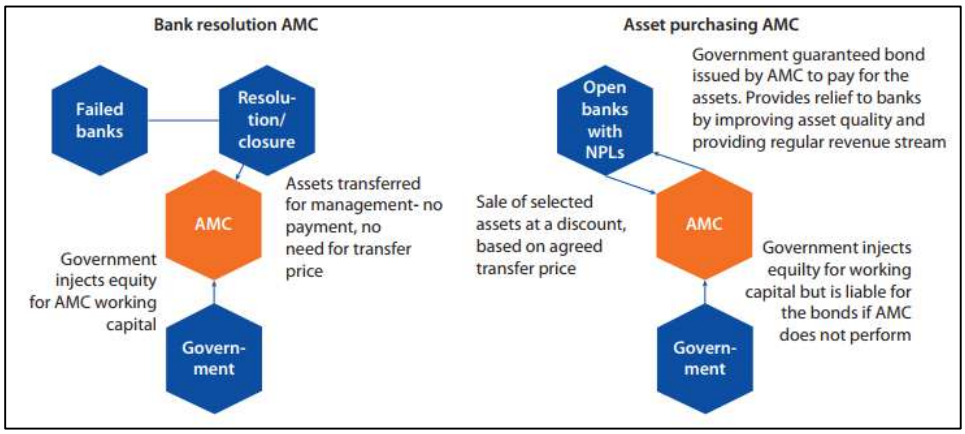
As per the above figure, considering an environment where the banking market is consolidated and growing fast, the banks might be better served by their standard procedures for dealing with NPLs instead of setting up a working unit or AMC. On the other end of the spectrum, when the bank in terms of market share is incumbent with a large-sized NPL relative to its portfolio and its ability to raise capital is weak, the maximum risk transfer is required. Further, if the bank is working in an environment where the banking market is fragmented, and the growth of the market is slow then the bank banks should create an AMC.

4.1.3 Centralised AMC: Types

AMC is a public, private, or joint public/private entity (also referred to as a bad bank) which manages non-performing assets removed from the financial system with the goal of maximizing the recovery value of these assets, thereby reducing the cost of recapitalization (WB, May 2018). In the process, the bank divides its assets into two categories. The illiquid and risky securities go into a bad pile along with other troubled assets such as

nonperforming loans. What is left are the good assets that represent the ongoing core business of the bank. In the formation of centralised AMCs, two broad approaches have been used. 1) as a bank resolution entity (to restructure the debt, sell, and liquidate failed banks), or 2) as an asset purchasing entity (purchasing NPLs from open banks in exchange for securities and the outright sale of the loan/underlying asset).

Figure 4.3: Public AMC: Types



Source: Cerruti, C and Neyens, R (2016)

In the first approach, the stressed assets of the banks are transferred for management. The AMC is selected to restructure or liquidate insolvent or failed banks entirely or partly. It does not select or purchase assets. Hence, AMC does not engage in any kind of financial transaction or purchase. In the second approach, however, the AMC is involved in purchasing stressed assets from banks that are still in operation. These assets must meet specific quality as defined by the legislation or the AMC. A financial transaction takes place between the selling bank and the AMC. Generally, the AMC issues government-guaranteed bonds to pay for the purchase. In both cases, the value of the stressed assets needs to be settled by a prior evaluation of the assets by the supervisor, or by the AMC through a transparent, market-based, due diligence process by an experienced and independent third party.

4.2 Centralised AMCs in Different Countries: Name and Establishment Years

Although loan restructuring, harnessing and reforming insolvency and resolution frameworks have been tried and tested over a period to deal with the overhang of non-performing assets (NPAs), the centralised Asset Management Company was established globally in different times and remains one of the more popular concepts, especially while dealing with system-wide stressed assets (Table-4.1).

Table 4.1: CAMCs and Their Dates of Establishment

Country	Name of Centralized Asset Management Company	Establishment Date
Korea	Korean Asset Management Company (KAMCO)	1962
USA	Resolution Trust Corporation (RTC)	1989
Sweden	Securum	1992
Indonesia	Indonesian Bank Restructuring Agency (IBRA)	1998
Malaysia	Danaharta	1998
China	Orient, Great Wall, Cinda, Huarong Asset Management	1999
Japan	Resolution and Collection Corporation (RCC)	1999
Thailand	Thai Asset Management Company (TAMC)	2001
Ireland	National Asset Management Company (NAMA)	2009
Germany	FMS Wert management	2010
UK	UK Asset Resolution Limited (UKAR)	2010
Spain	SAREB	2012
Pakistan*	The Corporate Industrial Restructuring Corp (CIRC)	2000
India	National Asset Reconstruction Company Ltd (NARCL)	2022

Source: Herwadkar, Snehal S. et al. (2022)

Notes: * After establishing in 2000, Pakistan AMC (CIRC) closed its activities in 2006 by handing over its half-done job to the National Bank of Pakistan.

4.3 Centralized Asset Management Company: Advantages

The global experiences suggest that a centralized asset management company has several systemic benefits in reducing NPLs. Further, it enables and complements the existing mechanism of bad asset resolutions (Table-4.2.)

Table 4.2: Centralized Asset Management Company: Advantages

Advantages	Description
Overcomes asymmetric information and reduces market failures.	Asymmetric information between buyers and sellers prevents markets work efficiently. For a sale to take place, buyers and sellers need to agree on a price. In the markets for distressed assets, usually, sellers have more inside information than buyers about the quality and probability of recovery of the assets which they may not transfer to buyers. The lack of transparency about the quality and real value of assets results in uneven bargaining power between buyers and sellers. This situation leads to a large gap between the market price and the real value of the assets. AMC through its impartial and accurate asset evaluations and clear communication reduces asymmetric information and boosts market confidence.
Bridges inter-temporal pricing gaps	When the liquidity in the markets is drying up, the risk premia required by the investors is high because of high-risk aversion. In this situation, market prices for NPLs and the underlying collateral are temporarily low-down and gaps emerged between the initial transfer price and the market price. But, with of the expectation that NPL sale prices may recover once economic conditions improve, AMCs may tend to postpone their disposal of bad assets at a low price. In this way, AMCs bring a bridge for the inter-temporal pricing gaps. The bridging is achieved because AMCs sell the NPLs to the market after a long gestation period to maximize their recovery value.
Makes NPLs attractive to the investors	The quality and value of NPL portfolios are hard to assess from the outside. The benefit of setting up an AMC is that it splits the bank's assets and liabilities. The separation of the NPL portfolio into an AMC makes the bank attractive to investors by aligning its risk/return profile with investors' preferences.
Speeds up the NPL resolution	AMC consolidates the creditor position and enhances the bargaining power of the creditors in dealing with debtors. Moreover, AMC can more easily acquire the specialized expertise required to pool of NPLs both of which help speed up the NPL resolution.
Provides economies of scale	The creation of a single organization to collect scattered NPLs from various banks may lower setup and management costs due to economies of scale.

Source: Desk Study

4.4 Centralized Asset Management Company: Challenges

A Centralized Asset Management Company faces a number of challenges worldwide including moral hazard, cost to the Government exchequer, pricing of the NPLs, etc. (Table-4.3) in its establishment and operation. It is expected that utmost care will be taken to address the following challenges in designing and structuring the proposed PAMC in Bangladesh.

Table 4.3: Centralized Asset Management Company: Challenges

Challenges	Description
Could generate moral hazard	AMCs can generate moral hazard in the lending behaviour of banks. A moral hazard problem can happen when banks can able to transfer their NPLs to the AMCs at little cost or if an AMC buys banks' NPLs at deliberately inflated prices providing an incentive for banks to continue with the same behaviour. This kind of situation creates pressure on fiscal budgets and leads to the bad loans problem.
First-mover disadvantages	If participation in the AMC is left entirely to the discretion of banks, then it may result in inaction by the participating banks due to first-mover disadvantages[11]. In the beginning, if the AMC is not strong enough to attract enough investors, then secondary markets will be affected by the first-mover disadvantage that may result in inaction by the participating banks. There may also be a cherry-picking of NPLs, with participating banks trying to offload their lowest-quality NPLs to the AMC.
AMC can be a complex operation	Creating an AMC can be a complex operation requiring significant investments and special skills. Moreover, an AMC requires a separate legal entity and operational organization, which can be extremely complex, especially regarding impaired asset valuation.
A poorly designed AMC may increase the risks to the country	Losses incurred by an AMC fall inevitably on the resource-constrained government, and ultimately, on the taxpayers and adversely affect the value of residual NPLs remaining in banks. This, in turn, would increase the contingent liability of the country.

Source: Desk Study

[11] The first-mover disadvantage refers to a disadvantage or challenge faced by an institution that first introduces a product or service to the market. However, the first-mover disadvantage enables an institution to establish strong recognition and product/service loyalty before other entrants to the market.

5. Issues Relating to AMC: Cross-Country Evidence

5.1 Funding of Asset Management Company (AMC)

Government, central bank and public banks are the main financiers in PAMC. In addition, public offering of shares and debt securities as well as private banks are also utilized to get funds in AMC. In case of China, AMC is funded by Govt, public banks and financial institutions. In India, public sector banks and financial institutions, and private banks have contributed to the equity of AMC (Table-5.1) whereas the Federal Government funded the total amount of equity of AMC in Pakistan. East Asian Countries also follow the same footprints, the exception is that issuance of Govt guaranteed bonds has also played important role in funding AMC. For example, the Korean Asset Management Company (KAMCO) issues government-guaranteed bonds for collecting funds and generates about one-fourth of its paid-up capital from other financial institutions.

Table 5.1: Funding of Asset Management Company (AMC)

India and Pakistan	East Asian Countries	China
I. Capitalizing through equity contributions from banks/financial institutions (FIs). Holding 51 per cent stake by Public sector banks and state-owned financial institutions and the rest is with the private sector lenders. II. Raising debt as and when required.	I. Funded by Government directly. II. Through the issuance of government guaranteed bonds. III. Contributions of financial institutions in equity of AMC	I. Equity injection by the Ministry of Finance (MOF). II. AMC Bond. III. Special Loans from the People's Bank of China (PBoC) IV. Commercial Borrowings from other financial institutions.

Source: Content Analysis.

5.2 Acquisition of Bad Assets

A wide variation is observed in the acquisition of bad assets across countries (Table 5.2). Indian AMC is going to buy all types of stressed assets except fraud loans[12] from all banks, however, it will concentrate more on the

[12] Banks operating in India reported fraud of Rs 4.92 trillion as on March 31, 2021, which represents nearly 4.5% of the total bank credit, showed Reserve Bank of India (RBI) data, which was sought under the Right to Information (RTI) Act by Saurabh Pandhare. The data showed that 90 banks and financial institutions reported a total of 45,613 cases of loan fraud till March 31, 2021(Business Standard, March 31, 2021).

recovery of assets of Public Sector Banks. Pakistan AMC was established to buy bad assets of around 100 industries from six Public Sector Banks. Among East Asian countries, in Thailand, AMC buys impaired assets from both Govt. and private banks and financial institutions, however transferring qualifying assets is obligatory for the Govt. banks but optional for the private banks. AMC in this region is mandated to buy a part of the bad loans with a minimum amount instead of buying the total amount of the impaired loans from banks/FIs. Danharta in Malaysia buys 80 per cent of the total NPLs of a bank/FI with a minimum amount of MYR 5 million whereas, in South Korea, half of the bad loans of a bank/FI are bought by the AMC whereas the remaining half of the loans are required to be collected by the respective banks /FIs. China follows geographical restrictions in buying NPLs, the local/provincial AMCs can acquire NPLs originating only from the same areas.

Table 5.2: Acquisition of Bad Assets

India and Pakistan	East Asian Countries	China
I. Acquiring aggregate bad loans from all Banks, mostly Public Sector Banks (PSBs). II. Loans classified as fraud cannot be sold to NARCL.	I. Acquiring toxic assets from Govt. as well as private owned banks and financial intuitions. II. Obligation or optional in shifting NPLs. III. Transferring a part of bad loans of banks / financial Institutions. IV. Setting a minimum amount of NPLs for handing over. IV. Acquiring NPLs originated from all sectors or particular sectors V. Analyzing to know the quality of the toxic loans and conducting due diligence on loans before purchasing any loan.	I. Geographically restrictions on acquisitions of NPLs. II. Taking over diverse assets ranging from manufacturing to the farm sector. III. Extending the vast majority of the NPLs by the state-owned commercial banks to SOEs.

Source: Content Analysis.

5.3 Pricing of Acquired Loan

Pricing of acquired loans is crucial for making this initiative successful. If a loan is transferred at a higher price, the profitability of AMC will be hampered. In contrast, transferring NPL at a lower price will deprive banks of getting the financial gains that they usually expect. Usually, factors like the nature and quality of assets, the book value of assets, the market value of the collateral and the probability of recovery are considered in the setting transfer price of the loan. Both China and India follow almost the same pricing principle. However, AMC in India is not paying the entire amount of NPL to banks like in China, rather it pays 15 per cent cash up front and provides government-guaranteed security for the remaining amount. In Pakistan, an independent evaluator appointed by the board of CIRC fixed the price of transferred loans. East Asian countries follow techniques like percentage of collateral, discounting at large, net tangible assets, and discounted cash flow in fixing transfer prices (Table 5.3). They also adjust pricing criteria depending on the market conditions over time.

Table 5.3: Pricing of Acquired Loan

India and Pakistan	East Asian Countries	China
1. NPLs are being acquired through a 15 per cent upfront payment in cash to the lenders and 85 per cent government-guaranteed security receipts (SRs), a tradable security. 2. Independent evaluator appointed by the board fixed the price of NPLs.	1. Paying a fixed percentage of the collateral value (In KAMCO, 45% of the collateral value). 2. Buying unsecured loans at a large discount (80% or more of face value). 3. Acquisition of assets at the negotiated price on an arm's length basis applying either the 'net tangible asset' or the discounted cash flow.	Acquiring NPLs at a flat rate of book value indicate the explicit approval of the Chinese Govt. for financing NPL acquisition.

Source: Content Analysis.

5.4 Legal Environment

The existing legal system in most of the countries where AMCs were established is found insufficient to operate and achieve the goal of AMC. Thus, a strong and adequate legal framework has been placed in action in all countries to overcome the probable hurdles an AMC may face before its establishment (Table-5.4).

Table 5.4: Legal Environment

India and Pakistan	East Asian Countries	China
1. The Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act, 2002 provides the legal basis for the setting up of ARCs in India. 2. Overhauling the rules governing Asset Reconstruction Companies (ARC) to enhance the availability of bad loans for transactions and bring in a wider set of investors to the market for distressed assets. III. CIRC in Pakistan can exercise power and function to acquire, purchase, hold, manage, restructure, rehabilitate, sell and dispose of NPAs.	**Korea:** Pending legislation would permit KAMCO to appoint a Special Administrator to manage a borrower's business or assets or both. **Indonesia**: AMU can foreclose on a loan without going through the court and it can buy/sell a loan without debtor approval. **Thailand:** AMC is exempted from notifying debtors of transfers of claims required by law. It is also exempted from certain fees and taxes. **Malaysia: (i)** Statutory vesting permits to step into the shoes of the selling institution, with the same rights and priority as a creditor. (ii) Can appoint a Special Administrator to take over a distressed company.	Since the establishment of four AMCs, Chinese authorities have issued a series of notices, guidance, judicial interpretation or changes of laws. The special regulations concerning AMCs, along with other laws or rules, formed the legal framework for the secondary NPL market.

Source: Content Analysis.

5.5 Disposal of Assets

Techniques for the disposal of assets are noticed as tailor-made to suit the nature of classified assets being dealt with. In East Asian Countries, a battery of techniques is being used. AMC is usually selling corporate loans to local and international investors as well as third parties/serving agents either directly or through the court (Table-5.5). AMC may give efforts to collect loans from the bank's borrowers through the negotiation process too. In this case, the AMC manages the collateral asset and equity in the debtor's company. Asset securitization is also popularly utilized in the disposal of acquired viable assets. In addition to the aforesaid techniques, China follows two more techniques like debt-equity SWAPs and leasing out the underlying assets.

Table 5.5: Disposal of Assets

India	East Asian Countries	China
I. Initiating to bring in a wider set of investors to the market for distressed assets. II.AMC is tying up with outside investors to bid for assets.	I. Selling corporate loans through open auctions to local and international investors. II. Selling commercial loans to selected third parties /servicing agents. III. Offering flexibility to borrowers to settle debts by providing a 100% discount on interest and a 25% discount on principal. IV. Issuing asset-backed securities to investors. V. Selling underlying assets through court or directly by AMC. VI. Entering joint venture partnerships with foreign investors in managing and disposing of assets. VII. Following two approaches - loan management (loan restructuring and disposal of loans) and asset management (managing collateral real estate and equity in the debtor's company)	I. Debt collection, portfolio sales, auctions, joint ventures, debt–equity SWAPs, and leasing out the underlying assets.

Source: Content Analysis.

5.6 Oversight and Supervision Authority

Supervising AMC in a pragmatic manner is a prerequisite for reaping the best benefits from AMC. This is also necessary for confirming the businesses of AMC in a transparent and professional manner in line with international best practices. The extant supervision authority of AMC is not uniform in all countries. In China, MOF, CBRC and CSRC are collectively supervising the activities of AMCs. In Malaysia, an oversight committee for Danaharta comprising three members representing the Ministry of Finance, BNM and the Securities Commission was established to approve appointments and terminations of special administrators and independent advisors including their recommendations. However, India is going to follow the subcontinent style i.e. supervision by RBI in oversighting the function of NARCL.

Table 5.6: Oversight and Supervision Authority

India and Pakistan	East Asian Countries	China
NARCL in India is expected to be regulated by RBI. CIRC in Pakistan was regulated and supervised by the State Bank of Pakistan.	Korea Asset Management Company (Kamco): Financial Supervisory Commission (FSC) supervises KAMCO. FSC consisting of KAMCO's CEO as well as officials from the FSC, MOFE, KDB, and outside professional organizations is working closely with the Ministry of Finance and Economy (MOFE). Malaysia Asset Management Corporation (Danaharta): An oversight committee of three members representing the Ministry of Finance, Bank of Negara Malaysia (BNM) and Securities Commission supervises Danaharta.	Ministry of Finance (MoF), China China Bank Regulatory Commission (CBRC)[13] China Securities Regulatory Commission are responsible for supervision.

Source: Content Analysis

5.7 Tail-off AMC/ Bad Bank

In the context of the lifetime of AMC, two views are prevailing. One view is in favour of a clearly defined realistic lifetime for the AMC. This view is dominated by moral Hazard concerns. On the other hand, the second view is that AMC is part of a toolkit for solving bad loans and does not have any sunset days. Korean and Chinese AMCs possess the latter view whereas Malaysia and Thailand own the former view.

Table 5.7: Tail off AMC/Bad Bank

India and Pakistan	East Asian Countries	China
1. India proposed for 5 years. 2. Pakistan established in 2002 for 6 years.	1. Korean AMC does not have any winding down days. 2. Danaharta, Malaysian AMC, was set up with a finite timeline (wound down in 2005) 3. The Thai Asset Management Company (TAMC) was established in 2001 for 12 years.	Established for 10 Years.

Source: Content Analysis.

[13] From April 2003 onward, the four AMCs of China have been regulated by CBRC which were regulated by PBoC before that date.

6.0 Elements of AMC: Focus Group Discussion (FGD) and Questionnaire Responses

6.1 Operational Goals for AMCs

An AMC must have clearly defined goals and a governance structure to operate effectively. Experience shows that AMCs having clearly defined goals, a sunset clause, and a commercial focus, including governance, transparency, and disclosure requirements are more likely to be successful. The AMC to be formed in Bangladesh can have, *inter alia*, the following priorities: one, disposing of the assets acquired against the bad asset as quickly as possible to avoid further deterioration in value and minimize the carrying cost; and two, corporate workouts and restructuring the nonperforming loans [borrowers] to make them marketable.

6.2 Structure of AMCs

6.2.1 Regulatory and Supervisory Structure

An AMC must have a clearly defined regulatory and supervisory structure for achieving the core objectives and ensuring accountability and transparency. Since the AMC is formed for specific, time-bound objectives to address a well-known problem, attempts might be made to commence the operations with regulations, and rules as detailed as possible to minimize the necessity of adding/modifying rules during its working life (Table-6.1).

Table 6.1: Regulatory and Supervisory Structure

Questions asked	Responses
What should be the regulatory and Supervisory structure of an AMC?	• The regulatory responsibility may lie with the MOF. Because of the nature of the mandate, supervisory requirements are mostly to be made on an off-site basis through reporting requirements. • Bangladesh Bank may act as supervisory authority in this regard.

Source: FGD and Questionnaire

6.2.2 Ownership and Number of AMCs

In terms of ownership, AMCs can be either public or private or even jointly owned. This is mostly depending on the amount and types of Bad loans and clout of the defaulters, etc. The choice of a number of AMCs depends on

several factors, including types of assets, the magnitude of the problem, the depth of markets, and the characteristics of debtors. When the types of impaired assets in different banks differ substantially, there may be some rationale to group assets by type centrally and transfer them to AMCs specializing in the management of a particular type of assets (Table-6.2).

Table 6.2: Ownership and Number of AMCs

Questions asked	Responses
What should be the ownership pattern of AMC?	• As a substantial amount of bad loans of banks in Bangladesh has to be transferred to an AMC over a short period, it is often difficult to find a private investor willing to own such an AMC without asking for significant government guarantees. So, a government-owned AMC will possibly be better in Bangladesh. • The government can bear the loss if any otherwise, it can be benefitted from any profit made by an AMC, especially in the case of uprising price movements of the assets acquired. • Moreover, the government has the state apparatus to manoeuvre the powerful willful defaulters.
What should be the number of AMCs in Bangladesh?	• There should be only one state-owned AMC at the beginning. In Bangladesh, there is a lack of depth in markets for bad loans as well as collateral security mortgaged against bad loans. Thus, there may be a stronger rationale for a centralized approach in the disposition of such assets to ensure uniformity and avoid any abuse of the special power. • However, based on experience, some private AMCs may be allowed either as subsidiaries of banks or independent organisations in the future.

Source: FGD and Questionnaire

6.2.3 Special Powers of AMC

The government may ensure that appropriate laws are in place for the AMC to operate efficiently. It should create a framework for debt workouts (Table-6.3).

Table 6.3: Special Powers of AMCs

Question Asked	Responses
Which special powers should be given to an AMC to be formed in Bangladesh?	• Considering the limitations of the existing legal recovery system, the AMC should be given special power in having the full rights on the bad loans and the collaterals like that of the lending banks. AMC may be given the power to

Question Asked	Responses
Which reforms in the existing laws, regulations and enforcement are needed to ensure the smooth functioning of the AMC?	realise the bad loans by capturing and selling the security against the loans and other property of the borrower without going to the court. • AMC should have the magisterial power to supersede the Money Loan Court Act, impose restrictions on the mobility of the borrower and even arrest the borrower. AMC can have a Special Enforcement Unit equipped with trained members of law enforcement agencies. Before issuing a stay order, the court might be required to hear the views of the AMC. • AMC might be allowed to get relevant information from Bangladesh Bank, NBR, Land Office, DSE, and CSE.

Source: FGD and Questionnaire

6.2.4 Sunset Clause/ Limited Life of AMC

Two views are prevailing over the lifetime of the AMC. One is in favour of a clearly defined time, the other believes that AMC is a part of the financial crisis toolkit (Table-6.4).

Table 6.4: Sunset Clause/ Limited Life of AMC

Questions Asked	Responses
Do AMCs need to have a Sunset Clause?	• To ensure speedy disposal of the assets acquired and to avoid moral hazard, the AMC should be formed for a certain period (sunset clause). • The period of AMC may be fixed based on the conservative calculation of the probable time required to recover a complicated large bad loan considering the existing legal environment for loan recovery.

Source: FGD and Questionnaire

6.3 Governance of AMCs

Good governance is critical for an AMC because the very nature of the asset management process invites political interference. An AMC should be governed according to the principles of corporate governance (Table-6.5).

Table 6.5: Governance of AMCs

Questions Asked	Responses
How to ensure good governance?	• AMC must have written policies regarding the acquisition, pricing, and disposal of assets acquired. • Directors should be sufficiently independent to assist the AMC in resisting pressure from borrowers and prospective purchasers of assets seeking preferential treatment. • The majority of the board of directors might be Independent Directors. • The board might have a clearly defined mandate and it might be responsible for assuring that the AMC carries out its mission and meets performance goals. • There should have independent internal control and compliance system including an internal audit that will give reasonable assurance relating to compliance of functions according to the approved policies and procedures and achievement of the goals of AMC. • The directors and key management people should be appointed from diverse fields such as financial sector regulators, bankers, lawyers, retired defense personnel, real estate specialists, liquidation experts, and people with insights into various industrial sectors. • AMC should have narrowly focused objectives, functions, and well-defined operational procedures as far as possible. • AMCs should have budgetary independence by meeting operating expenses from their income. • They must report to their competent authority to ensure accountability and transparency. • AMC should be insulated from political interference in the disposition and restructuring of assets. • AMC must be audited regularly to assure that its financial statements are accurate.

Source: FGD and Questionnaire

6.4 Operational Issues

The selection of assets to be purchased, pricing of assets, funding, and strategies for asset realisation are critical for the success of AMC (Table-6.6).

6.4.1 Selection of Banks and Assets

Table 6.6: Selection of Banks and Assets

Questions Asked	Responses
What should be the criteria for the selection of banks and Bad loans to be purchased?	• The AMC should be formed to buy NPAs from all banks. • Banks having a higher level of bad loan as compared to the total loans as determined by the AMC will be its priority. • Buying large Bad loans shall be the priority of AMC • AMC shall buy Written-off loans at a deep discount or based on profit and loss sharing with the transferring banks. • AMC can act as a recovery agent on a PL sharing basis.

Source: FGD and Questionnaire

6.4.2 Pricing of Assets to be Purchased

Realistic pricing of assets based on market price, sound accounting norms, loan classification and provisioning standards, and/or discounted present values, is sine-qua-non to the success of AMCs. The rigorous recognition of loan losses is the first and most important element of an effective strategy for dealing with problem assets, as it creates the right incentives for banks to restructure their loans and foreclose on the collateral (Table-6.7).

Table 6.7: Pricing of Assets to be Purchased

Questions Asked	Response
How to determine the price of transferred loans?	• The participatory bank will transfer default loans to AMC at an agreed price. • In the absence of an agreed price, the participatory banks will have to realise the BL within a stipulated time given by the AMC, otherwise, the bad loans shall be transferred to the AMC at the agreed price. • To ensure a fair price, besides the AMC, other PCBs having bad loans lower than a benchmark set by the AMC will be allowed to participate in the bidding process of Bad loans.

Source: FGD and Questionnaire

6.4.3 Funding of AMCs

AMCs must be sufficiently funded to perform their intended functions. To achieve transparency, the operating budget of the AMCs should be separated from its funding for asset takeover (Table-6.8).

Table 6.8: Funding of AMCs

Questions Asked	Responses
How much should be the fund size? How should AMC be funded?	• The size of the fund will be determined in line with the goal of AMC to purchase the bad loans. • Initially, one-third of the total required fund can be given as capital, which will be continued during the entire life of AMC. • Government bonds should also be issued. • Development partners can also be requested to fund AMCs in the form of equity and/or debt.

Source: FGD and Questionnaire

6.4.4 Asset Management and Disposition

Strategies of asset management and disposition should primarily be a commercial decision and be guided by the goal of maximizing the value of assets considering market conditions as well as the funding cost of the AMCs (Table-6.9).

Table 6.9: Asset Management and Disposition

Questions Asked	Responses
How to ensure quick and fair disposition of assets acquired?	• An online market should be created to dispose of the assets acquired. • There shall have transparent online bidding (auction sale) process to ensure that anyone desiring to participate can join in the bidding. • In selling assets, AMC may give preference to the buyers such as not-for-profit organisations that help achieve various social goals like offering education, health, and old home facilities.

Source: FGD and Questionnaire

7. Policy Suggestions

A number of issues generated from the analysis of cross-country evidence and responses got from the FGDs and questionnaire survey and finally from the roundtable discussion have been summarized below with a view to putting forward as policy suggestions for the authority.

7.1 Ownership and Number of AMCs

AMCs can be either public or private or even jointly owned. The choice of ownership and number of AMCs depends on several factors like the magnitude of the problem, depth of markets, and characteristics of debtors. When the types of impaired assets in different banks differ substantially, there may be some rationale to group assets by type centrally and transfer them to AMCs specializing in the management of a particular type of assets. Further, as in Bangladesh, a substantial amount of bad loans has to be transferred to an AMC and a sufficient amount of funds will be needed along with the capacity to penalize powerful and willful defaulters. In this consideration, a government-owned AMC would possibly be a better option for Bangladesh to start with.

7.2 Regulatory and Supervisory Structure

Since the AMC is formed for specific, time-bound objectives to address a well-known problem, attempts might be made to commence the operations with regulations, and rules as detailed as possible to minimize the necessity of adding/modifying rules during its tenure. The regulatory responsibility may lie with the MOF and Bangladesh Bank to act as the supervisory authority.

7.3 Governance of AMCs

The nature of the public AMC invites political interference which may be higher in Bangladesh. The board and management should be strong and independent enough to keep politics out of AMC's activities, resist pressure from borrowers and prospective purchasers of assets seeking preferential treatment, and run the organization as per written policies for the acquisition, pricing, and disposal of assets acquired. The directors and key management should be appointed from diverse fields such as financial sector regulators, bankers, lawyers, retired defense personnel, real estate specialists, liquidation experts, and people with insights into various industrial sectors.

7.4 Strong Internal Control and Compliance

In the achievement of the goals of AMC, there should have independent internal control and compliance system including an internal audit that will give reasonable assurance relating to compliance of functions according to the approved policies and procedures.

7.5 Funding of AMC

Government, central bank and public banks are usually the main financiers in PAMC. However, this may create an additional burden on the resource-constrained Government and its associated financial organizations. Government-guaranteed bonds can be issued for collecting funds. Further, the involvement of private banks and financial institutions, and the involvement of the share market in funding PAMC may reduce the pressure on the Government exchequer.

7.6 Acquisition of Bad Assets

PAMC is usually established to buy stressed assets from public sector banks. Buying bad loans from private banks is not also unusual. In Bangladesh, a number of private commercial banks are also seized in loan default traps apart from SOCBs. The proposed PAMC may keep the options open to buy stressed assets from both SOCBs and PCBs. However, PAMC should fix the criteria for buying toxic assets regarding the sector, amount, quality, and organization so that banks will not suffer from moral hazard problems knowing that they have PAMC options if their loan becomes bad.

7.7 Asset Management and Disposition

Strategies of asset management and disposition should be guided by the goal of maximizing the value of assets considering market conditions as well as the funding cost of the AMCs. An online market should be created to dispose of the assets acquired so that anyone from home and abroad desiring to participate can join in the bidding process. Further, state-of-the-art mechanisms used by AMCs globally like equity SWAPs, securitization, and tying up with overseas investors to bid for assets are required to be made available in Bangladesh too.

7.8 Pricing of Stressed Assets

The rigorous recognition of loan losses is the first and most important element of an effective strategy for dealing with the pricing of toxic assets, as it creates the right incentives for banks to restructure their loans and foreclose on the collateral. Realistic pricing of assets based on market price, sound accounting norms, loan classification and provisioning standards, and/or discounted present values is sine-qua-non to the success of AMCs. If the loan is transferred at a higher price, the profitability of AMC will be hampered. In contrast, transferring NPL at a lower price will deprive banks of getting the financial gains that they usually expect.

7.9 Sunset Clause

Considering the existing legal environment for loan recovery in the country, two views are prevailing about the lifetime of the AMC. One is in favour of a clearly defined time, the other believes that AMC is required to be continued as an integral part of the financial sector. To ensure speedy disposal of the assets acquired, the AMC might be formed for a certain period. The period of AMC may be fixed based on the conservative calculation of the probable time required to recover a complicated large bad loan.

7.10 Legal Powers of AMC

PAMC should be given special power to acquire, purchase, hold, manage, restructure, rehabilitate, sell, and dispose of NPAs. AMC should have the magisterial power to supersede the Money Loan Court Act, impose restrictions on the mobility of the borrower, and even arrest the borrower. Before issuing a stay order, the court may require to hear the views of the AMC. Getting access to information from Bangladesh Bank, NBR, Land Office, DSE, and CSE is also necessary in this respect.

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Appendix-1: Online Focus Group Discussion on "Asset Management Company: A Way-out to Solve NPL Problems in Bangladesh"

List of Nominated Participant(s) from Banks

#	Name and Designation	Bank Name
1.	Mohammad Shahriar Siddiqui, Additional Director	Bangladesh Bank
2.	মোঃ শফিউল আলম, ডেপুটি জেনারেল ম্যানেজার	Sonali Bank Ltd.
3.	Mohammad Golam Morshed, Assistant General Manager	Bangladesh Development Bank Ltd.
4.	Md. Fida Hasan, Deputy General Manager	BASIC Bank Ltd.
5.	জনাব মোঃ মোসাদ্দেক হোসেন, উপ-মহাব্যবস্থাপক	Rajshahi Krishi Unnayan Bank
6.	জনাব মোঃ জাকির হোসেন, উপ-মহাব্যবস্থাপক	Rajshahi Krishi Unnayan Bank
7.	Md. Anisur Rahman, Deputy General Manager	Pubali Bank Ltd.
8.	A. K. M. Kamal Uddin, SEVP	AB Bank Limited
9.	Md. Sohel Faisal, SVP & Divisional Head	National Bank Limited
10.	Md. Farid Uddin, Senior Vice President	Islami Bank Bangladesh Ltd.
11.	Syed Rezaul Karim Chowdhury, SVP	ONE Bank Ltd.
12.	Mohammad Kamruzzaman, Vice President	NCC Bank Ltd.
13.	Brig Gen Kamrul Islam (Retd.), SEVP & Head of Recovery & Monitoring	Trust Bank Ltd.
14.	Md. Abu Zafar Shamsuddin, EVP	Social Islami Bank Ltd.
15.	Muhammed Mizanul Kabir, SVP & Head	Southeast Bank Ltd
16.	Khondker Ishtiaque Hassan Mahdi, VP	Standard Bank Limited
17.	Md. Tariqul Islam, EVP & Head of SAM	EXIM Bank Limited
18.	Sheikh Moyeen Uddin, A.D.M.D & Head	Mutual Trust Bank Ltd.
19.	Mohammad Shariful Islam, Unit Head	Bank Asia Ltd.
20.	Jakir Hossain, FVP	South Bangla Agricultur and Commerce Bank Ltd.
21.	Mohammad Eqramul Islam, AVP	NRBC Bank
22.	Md. Abdullah, Sr. Executive Vice President & Head of Legal Affairs & Recovery	
23.	Syed Mahbubul Haq, SEVP, Head of Special Asset Management Division	Union Bank Ltd
24.	Md. Azadur Rahman, EVP & Head	NRB Bank Ltd.
25.	Sarafat Ullah, Vice President	BRAC Bank Ltd
26.	Shah Ibnul, Head of Corporate SAM	Shahjalal Islami Bank Ltd.
27.	Tariqul Islam, Executive Vice President & Head	Padma Bank Ltd
28.	Feroze Alam, SEVP & Head-RAMD & LAW	State Bank of India
29.	Joyanta Sarkar, FAVP	Habib Bank Ltd
30.	Md. Alamgir Hossen, Manager – Structured Credits	Commercial Bank of Ceylon PLC
31.	Md. Fozlul Hoque, Relationship Associate – Corporate Banking	
32.	Tahsina Rahman, Senior Manager & Head	

Paper Two

Exploring the Concept of Business Continuity Plan in the Banking Sector of Bangladesh

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List of Abbreviations

BAMLCO	Branch Anti Money Laundering Compliance Officer
BCP	Business Continuity Plan
BCMT	Business Continuity Management Team
BEZA	Bangladesh Economic Zones Authority
BCBS	Basel Committee on Banking Supervision
BIA	Business Impact Analysis
COSO	Committee of Sponsoring Organizations
CRO	Chief Risk Officer
CRR	Cash Reserve Ratio
CMT	Crisis Management Team
CFO	Chief Financial Officer
CAMLCO	Chief Anti-Money Laundering Compliance Officer
COO	Chief Operating Officer
CRM	Chief Risk Management
CTO	Chief Technology Officer
DRP	Disaster Recovery Plan
DRT	Disaster Recovery Team
DRS	Disaster Recovery Site
FGD	Focus Group Discussion
HoEA	Head of Enterprise Architecture
IOSCO	International Organization of Securities Commissions
IAIS	International Association of Insurance Supervisors
MESS	Mutually Exclusive and Supplementary Set
NFPA	National Fire Protection Association
NRP	National Resilience Program
PAMA	Plan, Adapt, Monitor, and Assess
RTO	Recovery Time Objective
RPO	Recovery Point Objective
SLR	Statutory Liquidity Ratio
SWIFT	Society for worldwide Interbank Financial Communication

Executive Summary

BCP considers all facets of banking services and infrastructure. Infrastructure, which includes needs like power, water, and first-aid kits at each workplace, is the most important part of BCP. The importance of individuals in an organization is also emphasized by BCP. This BCP element for a bank organization concentrates on cross-training several staff members for certain critical roles. Moreover, it emphasizes how important it is to make work-from-home choices available. The way a corporation uses technology in BCP is another crucial aspect of that business. Banks or any other company must develop a high- availability data center solution and corporate network solution in order to provide a number of applications or services for their clients.

Financial organizations must assure the preservation or recovery of activities, including services to customers, when confronted with adverse situations such natural disasters, technology delays, human errors, or terrorism. The BCP process is used to do this. The objectives of a business continuity plan (BCP) are to reduce financial losses for the institution, maintain services for customers and financial market participants, and lessen the negative effects that disruptions may have on an institution's strategic plans, operations, liquidity, credit quality, market position, and ability to adhere to relevant laws and regulations.

The banking industry's continued operation is crucial for the economy and state. Regardless of ownership status, banks need to be ready to help in both common and uncommon situations. Here, revenue is more important for sustaining and expanding than ensuring that the service is always the major priority. The banking industry established the BCP for two primary reasons, including laws and company-specific needs, in addition to natural calamities. In many aspects of their business, banks are required to abide by both national and international legislation. For banks, the development of information systems and information technology (IT) is crucial (IS). Banks increasingly provide micro-level financial services as a result of improvements in IT and IS. BCP is thus essential for banks to safeguard clients and follow international regulatory guidelines that most banks have separate policies or procedural guidelines for the smooth operation of banking activities.

The study reveals that all respondent banks prepare and follow the business target and budgets from year to year as well as they prepare and follow strategic business

plans every three/five-years basis. 95 percent of the respondents believe that BCP gets priority for banks. Moreover, 88 percent of the respondents have given emphasis on ICT and Business Operation (88%) followed by Formulation of Emergency Response Teams and their assigned duties (85%) and Senior management involvement (75%) respectively Regarding the status of employee training, most of the respondents informed staff are trained by the bank's training institute (86 percent), only a few get training at other training institutes (38 percent).

The purpose of the study is to explore the depth of the concept of Business Continuity Plan in the banking industry of Bangladesh. In attainting the objective, the research team has disseminated the concept, policy formulation and procedure of BCP and examined the implementation status of BCP. On the basis of our works and findings, the following issues are pertinent for discussion of the distinguished participants.

One, as evidenced in the literature, BCP is based on the BIA. As BIA procedure develops regulations, describes the probable effects of crisis events, and aids in economic recovery. Its goal is to safeguard personnel and property before, during, and after an emergency. The study reveals that BIA should include financial, operational, and reputational components of banks. However, banks relate BIA to IT issues by ignoring financial and operational issues. So, banks should develop proper strategy to analyze in-depth Business Impact Analysis (BIA) in the nation's banking industry, given the significance of BIA.

Two, Although BCP has many advantages for an organization, however, people generally do not like to think about unfavorable incidents or terrible business conditions. Additionally, a common belief is that *"it won't happen here."* The survey also shows that the concept of BCP is not well known at all levels of employees. Our analysis also finds a similar problem in the country's banking industry, which results in less focus on BCP, which is also beset by a lack of funding. How, therefore, banks should organize adequate training and awareness programs regarding BCP in all facets of banks.

Three, Proper policy, procedures, and control mechanisms are essential components of a successful BCP. Our research reveals that banks rarely conduct BCP drills as a result of high costs, and a lack of top management commitment. The study finds that another crucial element is having adequate and knowledgeable people to create and implement distinct BCP policies in all areas of banking. The

survey also reveals that some banks establish BCP plans with the assistance of executives from several departments of the bank, which adds to the workload. Additionally, the majority of banks lack a recognized and formal point of contacts for disruption related issues. In this context, Banks might develop a focused team for formulating BCP policy, procedures, and control mechanisms.

Finally, the literature demonstrates that several authors have defined the BCP process in a variety of ways. The study team has developed a standard BCP process with nearly all of the components based on the literature and questionnaire survey. So, all banks might adopt a uniform BCP process to attain uniform practice across all the banks in the country.

In conclusion, the study shows that most of the bankers remained with common five core risk areas of banks as per core risk management guidelines of Bangladesh Bank in identifying the risk areas other than IT risk. However, BCP is not limited to the core risks of banks only, rather bankers should have a capacity to identify all critical functions and other risk areas in banking operations and businesses. In this context, necessary activities and trainings can be taken up. Further research could be undertaken to find the ways to broaden the understanding of the bankers to determine critical functions and risk areas in banks. Starting from typical DRS, and crisis management, BCP has taken the shape of an all-encompassing, "umbrella" term and has further invited the overall Business Continuity Management (BCM). Moreover, given the importance of BCM, BCBS, in its 7 High Level Principles of Business Continuity, has also emphasized BCM reviews by financial authorities to incorporate ongoing assessment of the financial industry participants for which they are responsible.

Exploring the Concept of Business Continuity Plan in the Banking Sector of Bangladesh

1.0 Introduction

1.1. Background

There is no business that has no chance to experience "odd" days; the only difference is that it cannot be apprehended when it is going to hit at. The question is, are the enterprises willing to plan something for the unforeseen "odd" days while it is enjoying the "even" days? Huge uncertainties are there if the answer will be a yes in all cases. For about 25 years or more, Business Continuity Plan is one of the most uttered topics in enterprise management and leadership excellence. Although there are uncertainties about the dimension, extent and process of BCP. A business continuity plan (BCP) is a plan to help ensure that business processes can continue during a time of emergency or disaster.

Because "Studies of organizations in the United States that have experienced a disaster have shown that over 40 percent of the organizations struck by a serious disaster never resume operations. Over 25 percent of those that do manage to open their doors again are so weakened that they close down permanently within three years." (Ken Doughty, 2000)

A strategy for fostering organizational resilience is called Business Continuity Planning (BCP), which improves a company's capacity to go on and maintain commercial operations in the event of a disaster (Speight, 2011). BCP is crucial for maintaining infrastructure, supply chain effectiveness, and economic stability in addition to ensuring the delivery of health and social services (UNISDR, 2015).

Over the years, in all sectors, public and private businesses, have emphasized BCP as a tool for organizational resilience (Kahan, Allen, George, & Thompson, 2009). "Business continuity planning (BCP) addresses what industries of all sizes and kinds need to think through to stem such losses, maintain customers, support employees, and continue producing goods and services for the surrounding community and business

sector (Paton & Hill, 2006). Business continuity planning thus represents an intentional, thoughtful, and stepwise process that focuses on the dangers a business might face and what can be done to reduce losses and survive.

In addition to being serious health and social disaster, the Covid-19 pandemic poses a serious risk to enterprises and the continuation of their commercial operations. Organizations strive to handle crises and important situations to uphold their reputation, be more durable and guarantee continuity (RezaeiSoufi et al., 2019).

A recent study on 50 globally renowned corporations, all significant corporations have taken precautions to ensure that their ongoing business operations are not disturbed (Margherita and Marikka, 2021). The study also reveals how some companies were able to add new value by using digital channels to connect with current and potential clients, allocating more resources from ongoing operations to research and development (R&D) projects, or increasing their sense of civic duty and community involvement. Financial institution is not from exception.

Moreover, BCP is significantly required for the financial institution. BCP is urgently needed to mitigate the risks and threats associated with the banking sector and to limit the losses in the event of severe business interruptions.

Depending on their ownership structure and services, the four categories of scheduled banks in Bangladesh's banking system are state-owned commercial banks, private commercial banks, foreign commercial banks, and specialized banks. As of 31 March, 2022, there were 10942 branches of the 61 scheduled banks. Rural areas accounted for about 49% of bank branches, with the remaining locations being in cities (BB, 2022).

However, not all banks offer centralized consumer banking services. For instance, while all state-owned commercial banks have decentralized banking activities, all international commercial banks have centralized banking operations. Throughout the pandemic in 2020 and the first half of 2021, banks with centralized banking operations conducted business either through Work from Home Office or the partial opening of bank branches.

On the other hand, all state-owned commercial banks kept using actual bank branches to conduct business. In this regard, a new pattern of behavior in banking transactions has been observed by banks and bank customers.

All scheduled banks in the nation stayed open throughout the lockdown for a specified period of time on each working day to continue offering their clients regular financial services.

Several studies have examined the challenges faced by different sectors, such as RMG businesses, since the COVID-19 outbreak in March 2020. These include the decline of the RMG business (ILO 2020), the rate at which businesses recovered (Moutray, 2020) and the challenges faced by RMG workers. However, there have been a few studies to address bank BCP in the Covid-19 era. In August 2021 the Consultative Group on Risk Management (CGRM) set up a task force to examine the experiences of BIS member central banks in the Americas1 during the Covid-19 pandemic. This report is the outcome of the work of the task force and describes changes in the business continuity frameworks that took place at participating institutions after the beginning of the pandemic. Its findings might help central banks in the region and beyond to adjust their BCP to the new risks that emerged from the pandemic and the new ways of working that might outlive the pandemic (BIS website (www.bis.org, 2022).

The CGRM set up a task force to examine the experiences of BIS member central banks in the Americas during the Covid-19 pandemic, which may help central banks adjust their BCP to the new risks and new ways of working.

Additionally, the concept of business continuity planning is not widely employed, except for disaster recovery for information technology, and there is no research on BCP in Bangladesh's banking industry. Due to the covert nature of BCP in banks, it is crucial to create an appropriate structure that would enable banks to efficiently meet client needs throughout any crisis. Based on these contexts, the study investigates the applicability of BCP idea in Bangladesh's banking industry.

1.2 Objectives of the Study

Based on the background, the broad objective of the study is to familiarize the concept of the Business Continuity Plan in the banking industry of Bangladesh. The specific objectives are to (i) disseminate the concept of policy formulation and procedure of BCP; (ii) examine the implementation status of BCP in the banking industry of Bangladesh, and (iii) assess the prospects and challenges of implementing BCP in banks.

1.3 Data and Methodology

Data are gathered from primary and secondary sources to meet the study objectives. As exploring the notion of BCP is the main goal of this study, the conceptual foundation of BCP is derived from published literature, research papers, various publications, and policy documents of various central banks on BCP. A structured questionnaire (Appendix-1) was developed to investigate the current status of BCP and implementation of BCP within the context of Bangladesh's banking industry. The questionnaire was sent to all banks to be filled in by the CRO, CFO, CAMLCO, COO, CRM, and CTO / Equivalent Executive of the banks. A total number of 30 banks (Appendix-2) responded to the questionnaire. To validate the data of the respondents, a Focus Group Discussion (FGD) was conducted where 28 senior-level bank executives participated (Appendix-3). A short semi-structured questionnaire was developed to know the understanding level on BCP among general bankers including senior officers and officers of different banks where 100 respondents gave their feedback. The research team also conducted interviews over telephone with senior-level executives including AMD, DMD, and senior executives of banks for deepening understanding of the status of BCP in the banking sector of Bangladesh.

1.4 Organization of the Paper

With the above background, objectives, and methodology, the second section includes a literature review on BCP and the conceptual framework of BCP. Global initiatives of some selected policymakers on BCP are placed in section three. Section four discusses the regulatory framework of BCP in

the context of Bangladesh. The status and challenges of BCP in the banking sector of Bangladesh are examined in section 5. Finally, six deal with the recommendations based on the issues raised in the round table discussion section.

1.5 Limitations of the Study

The research team had to concentrate on published literature for generating conceptual clarity because the study attempted to analyze the BCP in Bangladesh's banking industry and no prior studies are available in the Bangladesh context. The data provided in the study for the Bangladesh context is heterogenous in nature, creating some scope for further study on BCP.

2.0 Review of Literature

BCP considers every facet of infrastructure and services in an organization, whether bank or non-bank organization. The most crucial component of BCP is infrastructure. BCP also emphasizes the role of people in an organization. It also places a strong emphasis on facilitating work-from-home options. Another important component of a company is its use of technology in BCP. To sustain a variety of applications or services for their customers, banks or any organization must create a data centre solution and a corporate network solution that provides high availability.

2.1 Definitions and Impact of Business Continuity Planning (BCP)

BCP is an iterative process created to identify applications that are essential to the operation of the organization and to support policies, procedures, processes, and plans that will ensure that these operations continue in the case of a disaster (Nicolette & Schmidt, 2001). The process called BCP is created to identify mission-critical business functions and implement rules, procedures, processes, and plans to assure the continuation of these functions in the case of unforeseen circumstances. Despite possible parallels between industries and companies, each organization is different and will therefore have a different BCP (Nickolette & Schmidt, 2001).

Plans and procedures for usage in the event of disasters are created through the BCP process. Mick (2002) stressed the importance of integrating BCP into organizational culture. BCP had developed from basic reactive disaster recovery planning, through crisis management that was primarily fueled by information technology, and eventually to a more proactive comprehensive strategy, according to Charles Cresson Wood's analysis of the development phases in 2002.

When faced with unfavourable circumstances like natural catastrophes, technological setbacks, human mistakes, or terrorism, financial institutions must ensure the maintenance or recovery of operations, including services to consumers. This is done through the BCP procedure. The goals of a business continuity plan (BCP) are to limit the institution's financial losses, maintain customer and financial market participant services, and lessen the detrimental effects that disruptions may have on an institution's strategic plans, operations, liquidity, credit quality, market position, and capacity to comply with relevant laws and regulations. (Booklet on Business Continuity Planning, March 2003).

Business continuity planning (BCP) is a procedure that Cerullo and Cerullo (2004) gave as a roadmap to help firms improve. They looked at three components for BCP, including: (2) A catastrophe recovery plan, (3) a test, and (4) training.

The components of a DRP would be included in a BCP, which is a collection of processes and information designed, gathered, and maintained in readiness for use in the case of an emergency or disaster (Rozek & Groth 2008). Business continuity planning, according to Rozek & Groth (2008), is the process of developing, testing, and maintaining an organization-wide plan to recover from any type of disaster. A BCP is a document that is created and maintained with a collection of instructions and information to be used in the case of an emergency or disaster (Rozek & Groth, 2008).

Any modern company that takes its business and its clients seriously need to have a business continuity plan (BCP) (Levinson, 2012). BCP might

therefore be thought of as the client safety net. Asset protection and management are both concerns with BCP.

According to Montri Wiboonrat and Kitti Kosavisutte (2008), it is crucial to think about disaster recovery and business continuity plan because shutting down a bank's mission-critical applications for even a brief period could have catastrophic direct and indirect costs to the state and its economy.

Disaster impacts are provided in Box-2.1 so that readers can better comprehend the advantages of BCP. According to the literature (Rothstein Associates, 2008), this data was gathered from various organizations around the world:

Box 2.1: Disaster Impacts

- Although businesses in Australia face hazards from hurricanes, floods, and other natural disasters, roughly 55–60% do not have a plan to deal with them.
- More than half of the 1,257 managers questioned by the UK's Chartered Management Institute did not have a business continuity plan in place.
- 43% of businesses that experience calamities never fully recover.
- Ninety percent of companies that experience data loss in a disaster will shut down within two years of the incident.
- Eighty percent of companies without DR plan to shut down within a year of a storm or fire. 43 percent of businesses with BCP plans don't test them yearly.
- More than 40% of businesses lack redundant servers or backup locations for crucial company operations.
- The National Fire Protection Association (NFPA, 2007) criteria for disaster/emergency management and business continuity have not been adopted or executed by a total of 66% of US businesses.

The frequent disasters that affect entire communities, as well as the rare calamities that businesses, institutions, municipalities, and government organizations have experienced over the past dozen or so years, have demonstrated that preparing for disaster recovery alone is insufficient. Planning for company continuity is also necessary (Moore, 1995).

Numerous factors, both ordinary and dramatic, can lead to disasters, therefore BCP must cover every element of operations (Cervone, 2006). BCPs were formerly the exclusive domain of risk managers and continuity specialists, but they are now featured prominently in the business media and on people's minds all around the world. Businesses can assist in avoid history from repeating itself by analysing what went wrong by looking back at September 11's BCP accomplishments and failures (Grimaldi, 2008).

2.2 Relevant Literature on BCP

Business Impact Analysis (BIA), catastrophe contingency recovery plans, and tests and training are the three components of business continuity planning (BCP), which Cerullo and Cerullo (2004) gave as a guideline to improve the BCP process in organizations. In their 2005 case study research, Zsidisin, Melnyk, and Ragatz explained how and why businesses needed to develop BCPs to handle disruptive situations in their organizations.

In their 2005 case study research, Zsidisin, Melnyk, and Ragatz explained how and why businesses needed to develop BCPs to handle disruptive situations in their organizations. Nijaz Bajgoric (2006) made it clear that BCP and plans did not signal the end of business continuity activities for the activities in BCP. Between planning and ongoing management of greater resilience from and reaction to business interruptions, they serve as the pivot.

Many people confuse BCP with IT disaster recovery planning, claims Maria Cirino (2007). A thorough description of the system and network infrastructure should be included in the BCP. The key business processes and functional activities that each system is depending upon should be made explicit in such documentation. The goal of the BCP is to fully understand the key business processes, activities, and systems to respond to service-based incidents in addition to documenting backup and recovery procedures and any off-site storage arrangements for data or media in the event of a significant premises-based incident (such as a power outage, fire, flood, etc). (e.g. email, venue facilities, network services, etc.)

In Business Continuity and Disaster Recovery Planning for IT Professionals by Susan Snedaker (June 21, 2007) is reminded of the importance of creating and maintaining a BC/DR plan. Bakowski (2007) addressed four general steps including preparedness, prevention, response, and recovery for risk management in organizations. Bakowski's (2007) framework was revised by Speight (2011) in three phases including mitigation, preparedness, and response.

According to Bhamra, Dani, and Burnard (2011), BCP and organizational resilience are directly related. The majority of the organizations, that have BCPs for handling disruptive occurrences and quickly resuming normal operations, were captured after they looked into the experiences of the organizations. Using a fuzzy cost-benefit analysis, Rabbani, Soufi, and Torabi (2016) concluded that BCP is the optimal method for handling disruptive situations. They stated that appropriate BCPs are required for BCP implementation in an organization.

Research has also been done in qualitative methods, highlighting the need of offering appropriate BCPs as a means of enhancing organizational resilience (Sahebjamnia, Torabi, and Mansouri 2015).

2.3 Factors that affect Business Continuity Planning (BCP)

There is a set of instructions to follow developed by Karakasidis (1997) that consists of eleven components for creating a BCP. These elements are meant to be utilized with a risk management procedure. BCP had developed from basic reactive disaster recovery planning, through crisis management that was primarily fuelled by information technology, and eventually to a more proactive comprehensive strategy, according to Charles Cresson Wood's analysis of the development phases in 2002.

James C. Barnes (2003) developed a BCP tool in his book "A Guide to Company Continuity Planning," for successfully handle many of the day-to-day issues of business contingency

BCP enjoys an extension of management thoughts in recent times and now in a number of above mentioned publications it is more comprehensively

advocating for a Business Continuity Management. The development and implementation of business continuity management is an integral part of running an effective organization in today's world. Business Continuity Management is a term that broadly covers the following areas:

- Business Resumption Planning[14]
- Disaster Recovery Planning[15]
- Crisis Management[16]
- Business Continuity Planning[17].

2.4 Business Continuity Planning and Banking Industry

Without the availability of banking services, no real sector can operate. Consequently, it is essential for the economy and state that the banking sector continues to operate. Regardless of ownership status, banks must be prepared to assist both in normal and unusual circumstances. Here profitability matters mainly to sustain and grow, rather continuing the service always remain at the primary focus. Which services should be continued in all circumstances is a conundrum. Is it possible to ignore either of the aforementioned points?

In addition to natural disasters, the banking sector developed the BCP for two main reasons: rules and business-specific requirements. Banks must adhere to both domestic and international regulations in many areas of

[14] The operations piece of business continuity planning. Also see Disaster recovery planning.

[15] The technological aspect of business continuity planning. The advance planning and preparations, which are necessary to minimize loss and ensure continuity of the critical business functions of an organization in the event of disaster. Similar terms: contingency planning; business resumption planning; corporate contingency planning; business interruption planning; disaster preparedness.

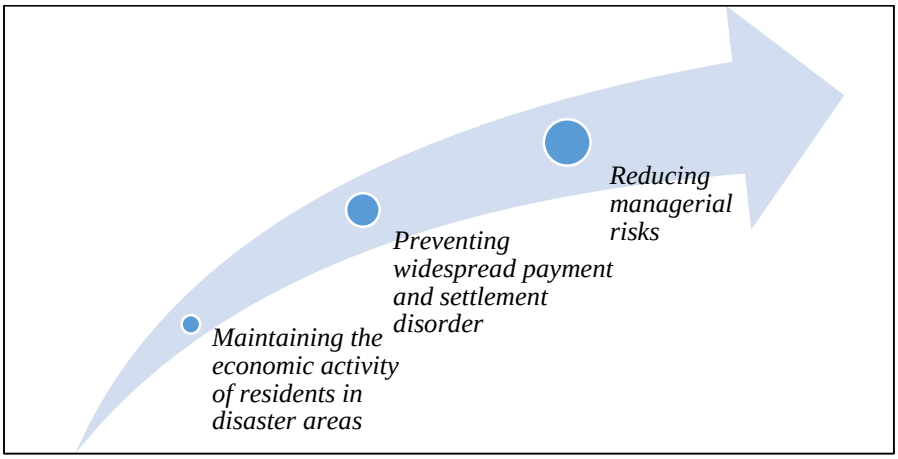
[16] The overall coordination of an organization's response to a crisis, in an effective, timely manner, with the goal of avoiding or minimizing damage to the organization's profitability, reputation, or ability to operate.

[17] According to Maria Cirino (2007), the goal of a BCP is to fully understand the most important business processes, activities, and systems to respond to a service-based incident, as well as to document backup and recovery procedures and any off-site storage arrangements for data and media in the event of a significant premises-based incident (such as a power outage, fire, flood, etc.).

banking operations. The advancement of information technology (IT) and information systems is essential for banks (IS). Banks now provide micro-level banking services because of IT and IS developments. BCP is therefore crucial for banks to protect customers and adhere to global regulatory standards. According to the Bank of Japan, the banking business has a different BCP than other industries, as of 2003. The study identified three aspects of BCP at banks that set them apart from non-banking industries.

Pointed out the importance of BCP at banks for BCP is different from non-financial sectors (Figure-2.1).

Figure 2.1: Three Aspects of BCP at Banks



Source: Bank of Japan, 2003

BCP makes ensuring that minimally necessary financial services continue to be provided both during and after disasters. The suspension of financial institution operations during and after disasters has major consequences. Customers of the banks, for example, could not be able to withdraw money in a disaster area, and not having enough cash on hand would prevent them from purchasing food and other necessities.

Broad payment and settlement problems can be contained at banks thanks to BCP. Payment and settlement services are the backbone of economic activity and form a connected chain across society. Therefore, a default may spread beyond the directly afflicted area and may even hinder economic activity across the nation if financial institutions in a catastrophe area are

unable to make payments. Using BCP, financial institutions can lower their managerial risks. When operations are momentarily halted due to a calamity, financial institutions find it difficult to seize lucrative opportunities.

2.5 BCP Process

Some of the BCP processes are shown in the following tables. Based on the following tables, we have developed a summary table of the common BCP process (Box-2.2 to 2.9).

Box 2.2: BCP Process by Karakasidis (1997)	**Box 2.3: BCP Process by Chow (2000)**
a) Approval from the top management b) Establishment of a BCP committee c) Performing Business Impact Analysis (BIA) d) Prioritize business requirements and evaluate critical needs e) Define the business continuity strategy f) Allied recovery process g) Preparing business continuity strategy h) Business recovery plan preparation i) Testing criteria development j) Business recovery process testing k) Develop/review SLAs l) Update/revise the business recovery procedures.	a) Commitment of top management b) Acceptable budget and financial support c) Aligning BCP objectives with the organization's goals d) Project management techniques adoption while developing BCP e) Continuity planning committee formation f) Participation in BCP.

Box 2.4: BCP Process by Savage (2002)	**Box 2.5: BCP Process by Pitt & Goyal, (2004)**
a) Business Impact Analysis (BIA) b) Detailing activities for emergencies c) Identifying and empowering events for any disaster recovery phase d) Detecting and authorizing activities for managing the business recovery process e) Business recovery process Testing f) Implementing & Maintaining the process.	a) Obtaining top management approval b) Business Impact Analysis (BIA) c) BCP design and development d) BCP creation e) Testing of the plan f) Plan maintenance and update.

Box 2.6: BCP process by Botha & Von Solms (2004)	Box 2.7 BCP Process by Rozek & Groth (2008)
a) Phase one project planning (PP) b) Phase two BIA c) Phase three the Business Continuity Strategies (BCS) d) Phase four the Continuity Strategies Implementation (CSI) e) Phase five the Continuity Training (CTR) f) Phase six Continuity Testing (CTE) g) Phase seven BCP maintenance.	a) Getting top management approval b) Business Impact Analysis (BIA) c) Readiness strategies for disaster d) Develop and Implement the Plan e) Maintenance and Testing.
Box 2.8: BCP Process by Al-Zahrani (2009)	**Box 2.9: BCP Process by Swanson, Lynes & Gallup (2010)**
a) Analysis b) Planning and Design of BCP c) Testing and Implementation of BCP d) Maintenance and Review of BCP.	a) Contingency planning policy statement development b) Conducting a Business Impact Analysis (BIA) c) Preventive controls identification d) Contingency strategies creation e) Information system contingency plan development f) Plan testing, training, and exercises. g) Maintenance of plan.

Considering various common and uncommon steps and activities earmarked by the above eight group of experts we find following things to do with BCP Process.

Box 2.10: BCP Process

1. Commitment and approval of top management
2. Establishment of a BCP committee
3. Aligning BCP objectives with organizations goals.
4. Preparing business continuity strategy
5. Performing Business Impact Analysis (BIA)
6. Prioritize business requirements and evaluate critical functions
7. Preventive controls identification
8. Contingency planning policy statement development
9. Planning and Design of BCP
10. Acceptable budget and financial support
11. Business recovery plan preparation
12. Testing criteria development
13. Testing Exercise and Implementation of BCP
14. Detecting and authorizing activities for managing the business recovery process
15. Maintenance Update and Review of BCP
16. The Continuity Training (CTR).

Source: Author's Own Compilation

To ensure that activities can continue without interruption, effective BCP requires that specific measures be put in place. In this situation, banks may employ a phased-in strategy. It is more efficient, to begin with, modest preparations for other operations to respond appropriately to the suspension of crucial firm activities like data centers or key locations (phased-in approach). Plans should be constantly tested and reviewed as needed to ensure that they are feasible and workable. Disasters limit access to managerial resources because of severe time constraints.

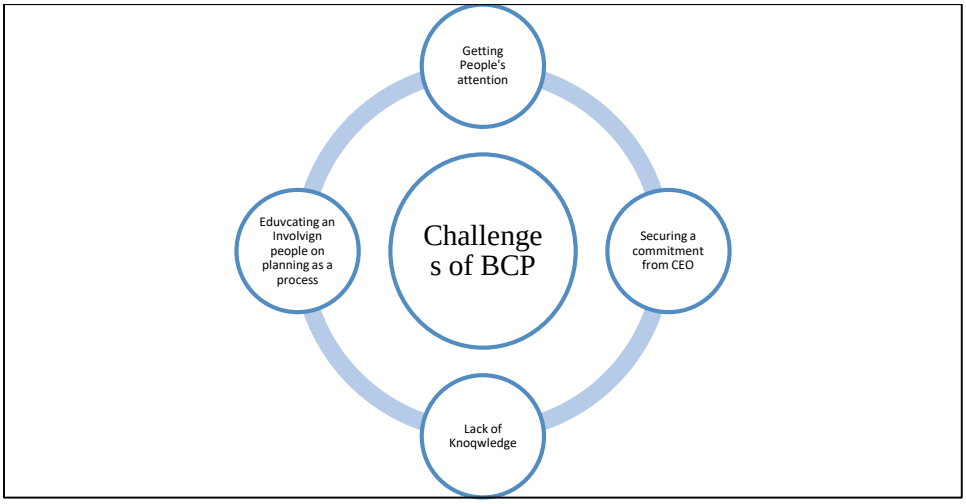
In the case of a disruption, the bank should emphasize the BCP program's prioritized key operations. Under widespread interruptions, taking special circumstances into account. Banks should work together with other market participants, the administrators of payment and settlement systems, and outside service providers to increase the effectiveness of their BCP for the overall resilience of the financial system.

2.6 The Challenges of Implementation of BCP

Although BCP has many advantages for a company, it also has a lot of drawbacks. Some of the difficulties in applying BCP are shown in figure 2.2. People generally do not like to think about unfavourable incidents or terrible business conditions. Disasters and the loss of employment, income, and opportunity are undoubtedly terrible events, and individuals often want to avoid talking about them. Additionally, a common belief is that "it won't happen here."

For BCP to be effective, the CEO's commitment must be obtained. BCP demands an investment that might range from being very inexpensive to quite expensive. The next obstacle that planners will likely have to face is figuring out how various calamities can affect enterprises. Anyone in charge of business continuity planning will have to explain to team members why they are essential to one another. Many firms rely on essential staff to handle important duties, such as employing and paying employees as well as supervising and performing particular activities. The people who fill those responsibilities possess the knowledge and experience important.

Figure 2.2: Challenges of BCP in a Financial Institution



Instead of considering other organizational factors like people, the process, and the infrastructure, a BCP's focus has typically been on Information Technology (IT) (Hearnden, 1995). Hearnden (1995) underlines that only a small number of the plans are tested and revised frequently where they are implemented, significantly reducing their effectiveness. The failure of BCP was attributed to several issues, according to Grimaldi (2002) (Box 2.11). The conventional one-size-fits-all approach usually relies on small recovery teams for a brief periphery consisting of 20% of staff—to achieve economies of scale. Businesses are not managing their assets wisely when they develop BCPs but do not test them. It costs money, time, and effort to do this.

Box 2.11: Factors that Cause BCP Failure

- One-size-fits-all solution and Deficiencies in the tests
- Inadequate maintenance and Lack of senior management involvement
- No enterprise-wide accountability and coordination
- Operations take a backseat to technology
- No clear leadership structure or management contingency plans
- Rash cost-reduction campaigns that eliminate the BCP.

Source: Grimaldi (2002)

If maintenance is not sufficient and aggressive, BCPs quickly become outdated. A BCP program will not be successful if company executives are not on board. Setting the tone from the top will help to eliminate resistance to the challenging task of creating, evaluating, and sustaining BCPs. The corporation as a whole was in danger due to disparate levels of readiness among divisions brought on by a lack of centralized responsibility. Financially strapped businesses frequently cut back on funding for BCP initiatives. These companies wagered that, at least temporarily, the cost savings from cutting expenses would outweigh the higher risk of forgoing protection.

3.0 Global Initiatives or Regulations for Successful Implementation of BCP in the Banking Sector

One of the most fundamental parts of any recovery strategy for the efficient operation of any corporation is business continuity planning. Numerous reputable international organizations and central banks have created various policy measures, guiding principles, and business continuity guides after realizing the necessity and importance of BCP. On January 1, 1989, the U.S. Controller of Currency signed legislation requiring federally chartered financial firms to have a verifiable BCP.

In 2005, the Basel Committee on Banking Supervision created a set of High-level Principles for Business Continuity and urged all financial institutions to implement them. These principles typically include business impact analyses, recovery strategies, and business continuity plans, as well as testing programs, training, awareness campaigns, and communication and crisis management programs. These high-level guidelines are intended to assist national financial authorities and international standard-setting bodies in their efforts to increase the financial system's resilience to significant operational interruptions.).

Most Japanese financial institutions have some kind of business continuity plan in place, but as the Bank of Japan demonstrated in 2003, those plans still primarily concentrate on specific operating systems or locations and do not operate in a combined manner (Bank of Japan, 2003). As a result, financial institutions have strengthened their business continuity plans to

prepare for an interruption that is even more severe than what was initially anticipated. They created the Business Continuity Planning process as a result, which consists of a framework for strong project management, basic policy, firm-wide control section, and project management procedures, as well as identifying assumptions and conditions for business continuity planning, such as identification of material risks and damage scenarios.

Finally, they tested things like decision-making and communications systems, evacuation and relocation, and reviewing (Communications system testing/staff movement training & System operation testing/business operation training). They also introduced action plans like business continuity measures and robust backup data (Bank of Japan, 2003).

In 2004, a conference on business continuity challenges was co-hosted by the Financial Stability Forum and the Bank of England. The Basel Committee on Banking Supervision (BCBS), the International Organization of Securities Commissions (IOSCO), and the International Association of Insurance Supervisors (IAIS) or the Joint Forum were tasked by the Financial Stability Forum with reviewing the approaches taken by various nations and financial sectors to business continuity and determining whether it might be appropriate to develop high-level principles that could be used throughout the financial system.

When it issued a guidance paper [1998] for bank management to assess the sufficiency of controls regarding risks associated with computer and telecommunication systems, including interruption risks, the Reserve Bank of India had already acknowledged the significance of BCP. One such concern for banks was pushed to the forefront by the floods in Mumbai in 2005 and Chennai, which had its worst rains in 100 years.

The RBI underlined the importance of establishing a disaster recovery plan and business continuity plan (BCP) for risks related to technology as part of the ORM framework in its Guidance Note on "Management of Operational Risk" [2005]. The RBI required banks to ensure that the service provider has a BCP and that it is frequently updated and maintained under its guidelines on "Outsourcing of Financial Services by Banks" from 2005.

Risks and Control in Computer and Telecommunication Systems (RBI circular Ref. DBS.CO.ITC.BC. 10/31.09.001/ 97-98) (February 4, 1998). Additionally, the board of directors and top management are in charge of BCP.

The Board should give senior management clear instructions and direction about BCP, including how to prioritize crucial business areas, allot enough resources, review BCP tests, and ensure that BCP is maintained and routinely updated. (DBS.CO.IS Audit No. 19/31.02.03/2004-05, RBI/2004-05/420, April 2005). In 2013, the RBI developed unified BCP documentation from banks that address crucial people, processes, and technology concerns. This is significant given the growing role of 24x7 electronic banking channels. They concentrated on the three pillars of information security, vulnerability assessment, and business continuity planning (BCP). June 26, 2013 (RBI/2012-13/547DIT.CO(Policy)No. 2636/09.63.025/2012-13)

A COVID-19- Operational and Business Continuity Measures circular from the RBI was published in 2020, and its major goal was to urge its clients to use digital banking services as much as they could. A Quick Response Team has been established for careful monitoring from both a business and social standpoint. This team will operate as a single point of contact for regulators, outside institutions, and agencies and will regularly update top management on noteworthy events. It is necessary to do a thorough Business Impact Analysis and Risk Assessment (BIA-RA) before developing an organizational resilience strategy. 2011 Public Communications Policy of the ADB on Organizational Resilience.

To define priority areas and develop standards, procedures, and measures to ensure business continuity in public and private sector organizations responsible for critical infrastructure and services, the Public Governance and Territorial Development Directorate of the OECD High-Level Risk Forum formed a national strategy. The strategy should also define roles and responsibilities for the entire country's portfolio of critical hazards and human-caused threats, including steady-state difficulties, unexpected onset contingencies, and gradual-onset risks with the potential to cause harm across economic sectors and territorial boundaries. (Governance of major

risks, 2014; Public Governance and Territorial Development Directorate, OECD High-Level Risk Forum).

Some traditional risk management and measurement techniques that have been used by risk management professionals in many areas of operations, such as credit management, information technology (IT) systems, development projects, and business continuity planning, were introduced by the Committee of Sponsoring Organizations Enterprise Risk Management framework (COSO ERM) and the related COSO internal controls framework. This framework also tied major components of the COSO ERM framework model to concepts related to risk management. (COSO, 2020) Compliance Risk Management: Using the COSO ERM Framework.

Based on four important principles—Plan, Adapt, Monitor, and Assess—Covid-19, Business Continuity Approach provides a high-level guide to business continuity to help individual businesses survive Covid-19 (PAMA). This manual establishes a company task force on pandemic preparedness and evaluates the significance of business operations. Additionally, analyze a business continuity scenario and assign tasks for COVID-19 mitigation efforts Additionally, developing an internal and external communications strategy, investigate business continuity management programs, including employee work-from-home policies, identify supply chain risks, keeping an eye on the situation to see if it worsens, seeking local sources for business continuity advice, and receiving government support announcements are all important. Finally, keep checking over your pandemic preparedness plan. (Business Continuity Guide, ICC, COVID-19).

The Basel Committee on Banking Supervision developed a High-level Principles for Business Continuity in 2005 and pleaded for Effective Business Continuity Management in all financial institutes that typically incorporates business impact analyses, recovery strategies and business continuity plan as well as testing programmes, training and awareness programmes, and communication and crisis management programmes. In these High-level principles The Basel Committee on Banking Supervision described that such high-level principles set out are intended to support

international standard setting organisations and national financial authorities in their efforts to improve the resilience of financial systems to major operational disruptions (Basel Committee on Banking Supervision, the Joint Forum High-level principles for business continuity, December 2006).

Box 3.1: The 7 High Level principles of Business Continuity

Principle 1: Board and senior management responsibility
Principle 2: Major Operational Disruptions
Principle 3: Recovery Objectives
Principle 4: Communications
Principle 5: Cross-border Communications
Principle 6: Testing
Principle 7: Business Continuity management Reviews by Financial Authorities.
Source: The Basel Committee on Banking Supervision (2006)

Business Continuity Management Guidelines for Banks and Financial Institutions, 2021 was created by the Bank of Tanzania and covered the role of business continuity within a bank or financial institution with a focus on the responsibilities of the board, senior management, employees, and the internal audit function. Additionally, it offers advice to banks and financial institutions on how to create a BCP that is successful given the scale and breadth of their operations, how to adequately prepare for potential business interruption situations, and how to assess the suitability of their BCPs (Bank of Tanzania 2021).

4.0 Regulatory Framework of BCP for the Banks in Bangladesh

Bangladesh Bank instructed directives for putting in place Business Continuity Plan (BCP) and Disaster Recovery Plan (DRP) were issued, among other things, through chapter 6 of Guidelines on ICT security vide BRPD Circular No. 14 on 23 October 2005. This was the year that the first click on BCP in Bangladesh was made.

Business Continuity Plans (BCPs) are necessary to address operational risks and should consider the possibility of wide-area disasters, data center disasters, and the recovery plan, according to a 2005 guideline on ICT

security. The backup and recovery process should be taken into account by the BCP (Guidelines on ICT security, 2005).

"Compliance with the BCP and DRP-related directives of Chapter 6 of the Guidelines in banks and financial institutions has as yet proven unsatisfactory," the Bangladesh Bank stated in 2009. Newspaper and television media frequently covered horrific natural disasters like earthquakes, and the Basel II Accord gave BCP and DRP-related issues in banks and financial institutions top priority worldwide. The Joint Forum under the Basel Committee on Bank Supervision published high-level business continuity principles in August 2006.

Additionally, seven high-level business continuity principles were outlined in the paper, with BCP and DRP being specifically mentioned as risky areas, to protect ICT security in banks and financial institutions. The last sentence of BB's letter reads, "Therefore, it was directed to ensure compliance with BCP and DRP related directives of Chapter 6 in the Guideline on Information and Communication Technology for Scheduled Banks and Financial Institutions on an urgent basis" (DBI/Div/Circular No. 02. November 02, 2009).

To continue operating, a bank needs a business continuity plan that addresses disaster recovery. (2010 ICT Security Guidelines) To continue operating, a bank or NBFI needs to have an approved business continuity plan that addresses catastrophe recovery. (2015 ICT Security Guidelines).

The BCP must be distributed to all concerned parties. The recipients would receive a copy of the modified plan whenever any amendment or alteration takes place. BCP-related documents must be kept in a safe off-site location. One copy must be stored at the office for easy access. The BCP must consider system needs, processes, and interdependencies and be supported by the Business Impact Analysis (BIA) and Disaster Recovery Plan (DRP).

The following must be covered by the BCP: a) Action plan to resume business operations within the allotted period for both office hour disaster and disaster that occurs outside of office hours, emergency contacts, including employee addresses and phone numbers, vendors, and agencies.

Grab a list of supplies, including a disaster recovery site map and backup tapes, laptops, flash drives, etc. To ensure competency, BCP must be evaluated and assessed at least once every year. (BB, May 2015, Version 3.0, Guideline on ICT Security for Banks and Non-Bank Financial Institutions).

To ensure the continuity of agent banking services in the event of a disruption, the Bank is required to establish a Business Continuity Plan (BCP) and contingency procedures, within a set period. Prudent Practices for Agent Banking in Bangladesh, 2017, BB. According to BRPD Circular Letter No. 28 from December 27, 2018, the requirements for banks setting up business outlets include having a business continuity plan in place to deal with any unfavorable circumstances.

To ensure that it can continue to function as a going concern and to limit losses in the case of a serious business disruption, banks should have disaster recovery and business continuity strategies. The bank should be prepared for a variety of eventualities, and the business disruption and contingency plans should be appropriate for the size and complexity of the bank's activities. (DOS Circular No. 04, 2018: Risk Management Guidelines for Banks.

Business Continuity Plan (BCP) and contingency plans are among the essential elements of the Checklist for approval of Agent Banking. (BRPD Circular Letter 08, May 27, 2018) The Bangladesh Bank instructed banks to form bank-specific "Central Quick Response Teams" to respond to COVID-19, prepare a list of urgent and uninterrupted banking activities during the pandemic, and facilitate and encourage online transactions without visiting the branches, according to the BRPD Circular 05, Dated March 22, 2020. Additionally, BB instructed the banks to put together a "Mutually Exclusive and Supplementary Set (MESS)" for the staff.

As all office activities return to normal on May 28, 2020, BB established the COVID-19 Contingency Planning Strategic Committee to develop, carry out, and monitor the measures to stop the spread of COVID-19, which was essentially a crucial step toward BCP.

A condensed book titled "Policy Measures of Bangladesh Bank in Response to the COVID-19 Pandemic" was released by the Bangladesh Bank in January 2021. It was based on data and information that were available as of December 2020 and highlighted business continuity plans and key personnel for "Critical Service Management."

BCP is planned to be implemented in economic zones **by the Bangladesh Economic Zones Authority (BEZA) to safeguard investments from losses due to disasters and provide institutional frameworks for fostering business resilience, jointly organized by the Bangladesh Economic Zones Authority and the Bangladesh Planning Commission's Programming Division (BEZA).**

The Programming Division of the Bangladesh Planning Commission is supporting BEZA for this piloting with the assistance of the National Resilience Program (NRP) technically supported by UNDP and funded by FCDO of UK and Sida – the Swedish International Development Cooperation Agency of the Government of Sweden. Under this piloting initiative, guidelines will be developed for area-specific and enterprise-level business continuity plans and capacity development training on BCP will be imparted to the business administrators and BEZA officials. (The Business Standard, March 03, 2022).

5.0 Examining Status of BCP for the Banks in Bangladesh: Findings and Analysis

5.1. Separate Policy or Procedural Guideline or Plan in Banks

According to the survey, Table-5.1 that most banks have separate policies or procedural guidelines for the smooth operation of banking activities. Though most banks have general banking operations, IT security, and anti-money laundering policies, however, approximately 60 to 75 percent of banks have subsidiary and agent management policies. However, many banks do not have subsidiaries or agents to manage.

Table 5.1: Policy/Procedural Guideline/Plan in Banks

Policy / Procedural guideline / Plan	Percent of Banks
Subsidiary and Agent Management	60 - 75
Service Provider Employment and Management of Vendor, Reporting, and Management Information System, Foreign Trade and Foreign Exchange, Know Your Customer and Customer Acceptance	75 -89
General Banking and Operations, Information Technology and its Security, Internal Control and Compliance, Human Resource Recruitment and Management, Credit/Investment, Anti-Money Laundering, and CFT, Treasury and Asset Liability Management, Employee Discipline, Reward and Punishment, Purchase, Procurement and Depreciation	90 and above

Source: Questionnaire Survey

5.2 Business Target, Budget, and Strategic Business plan

Table 5.2 shows that all respondent banks prepare and follow the business target and budgets from year to year as well as they prepare and follow strategic business plans every three/five-years basis. It is a positive sign that banks have strategic business plans and business targets and budgets which give a clear direction to move in the competitive market. Among the respondent banks, having a strategic business plan, 95 percent of banks include BCP as a part of their plan.

Table 5.2: Status of Business Target, Budget, and Strategic Business Plan

Survey Questions	Percent of Banks
Does your bank prepare and follow business targets and budgets from year to year?	100
Does your bank prepare and follow Strategic Business Plan every three/five-year basis?	100
Does this Strategic Plan include any item like BCP?	95

Source: Questionnaire Survey

5.3 Priorities in the Yearly Plan/Target/Budget of Banks

In the yearly plan/target/budget, banks give priority to many issues. Priorities vary from bank to bank. Some priorities have been identified by our survey. Box-5.1 shows that banks have given priority to profitability, meeting shareholders' expectations, NPL reduction, export, import, and

remittance in their yearly plan. However, it is also seen that some banks have given focus to cyber security issues, product innovation, business continuity, and sustainable business growth which are getting traction to the management in upcoming days.

Box 5.1: Priorities in the Yearly Plan/Target/Budget of Banks

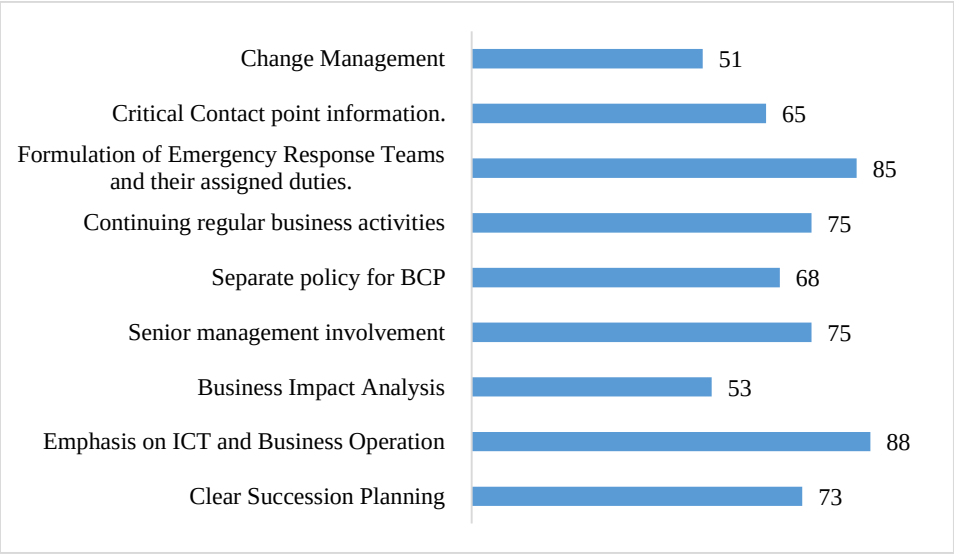
- Meeting shareholder expectations and provide superior client satisfaction
- Maintaining financial stability and improve operational effectiveness including asset quality, cost control, and productivity
- Profitability, Financial health, Capita management, Optimizing business transaction time, Crisis management, Data recovery, and Critical server recovery process.
- Achieving institutional consolidation and process optimization
- Establishing and maintain a work environment conducive to attracting, motivating, and retaining high-quality employees & professionals.
- Deposit, Investment, Export, Import, and Remittance
- Cost Efficiency, Sustainable business growth, Organizational resilience, and Business continuity
- SME Investment, Agriculture Investment Target, Green Banking, Sustainable Investment Target, and overall Investment Target
- Foreign trade, Fund Management (FX & amp; Local Currency)
- Sector-wise and geographical diversification, risk appetite, and investment growth plan.
- Cyber Security, Product upgradation, and licensing
- Balance sheet growth, NPL reduction, and employee benefits

Source: Questionnaire Survey

5.4 Priorities for BCP and Priority Areas of BCP

95 percent of the respondents believe that BCP gets priority for banks. Moreover, 88 percent of the respondents have given emphasis on ICT and Business Operation (88%) followed by Formulation of Emergency Response Teams and their assigned duties (85%) and Senior management involvement (75%) respectively (Figure-5.1). However, more than half of the respondents cited that Business Impact Analysis, Change Management, and Critical Contact point information are included in their priority list.

Figure 5.1: Priorities Areas of BCP by Banks (In Percent)



Source: Questionnaire Survey

5.5 Status of Business Impact Analysis (BIA) of Banks

Box 5.2 shows that 95 percent of the respondents are familiar with the exercises like BIA in their banks. In addition to that, all the respondents consider the business impact analysis on the financial, operational, and technical aspects. So, it is seen that they consider BIA as a holistic approach covering all the areas. They are also of the opinion that BCP, directly and indirectly, is required in the following areas of business and operations in the banks which is shown in Box-5.2.

Box 5.2: Direct and Indirect Impact of BCP

Areas of Operation and Business a BCP is directly Required / Effective	Areas of Operation and Business a BCP is indirectly Required / Effective
• General Banking and Card and ATM Operations • Payment Systems • Human Resource Planning and Branch Operations • Anti-Money laundering • Treasury and Central Trade Services • Core Banking System and SWIFT Service • Liquidity and Capital Management • Data processing and IT System Management • Agent Banking and Call Centre.	• Marketing and Legal Department • Research and Development • Training • Internal Control and Compliance • Customer loyalty and Market Reputation • Recruitment • Credit and Collection • Financial.

Source: Questionnaire Survey

5.6 Risk Areas Other than Information Technology in Banks

Most of the respondents were confined to the five core risk areas (credit risk, asset liability management risk, foreign exchange risk, money laundering risk, and internal control and compliance) defined by Bangladesh Bank to identify risk other than IT. A few respondents however mention operational risk, financial risk, and fraud risk in their list. Box-5.3 shows possible events of risks in the concerned areas other than IT.

Box 5.3: Possible Events of Risks in the Concerned Area Other than IT

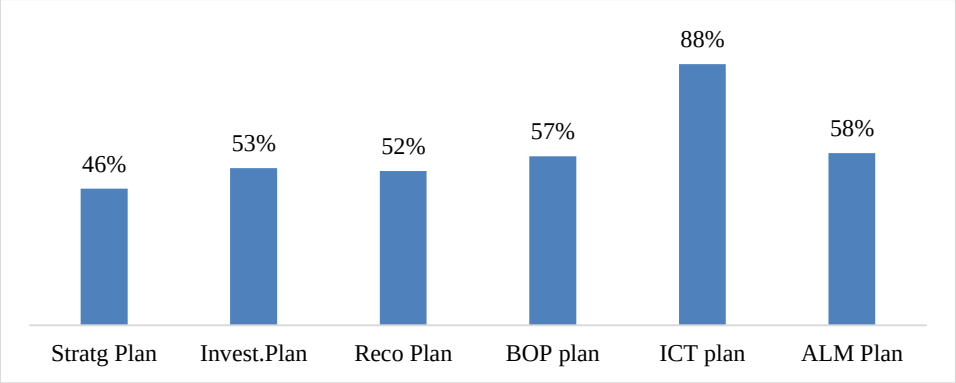
• Default and Concentration • Country and Institutional • Repayment and Client Analysis and Selection • Liquidity and Leverage Ratio • CRR and SLR • Forecasting error on Foreign Exchange Position and Exchange Rate Volatility • New policy by Regulatory Authority • Capital flight and Hiding Illegal Source • Bulk Data Cannot be Analyzed • Operation Fraud and Forgery.	• Violation of Laws, Regulations, Code of Conduct, and Organizational Standard of Practice • Material Misstatement and Inadequate or Failed Internal Processes, People, and System • Theft of Customer Data and Information • Loss of Asset and Non-Operation of Services in Disaster • Lose its Reputation and Brand value During Disaster • Loss of Customers' Trust and Expected Profitability.

Source: Questionnaire Survey

5.7 Inclusion of BCP with Other Policies

Figure 5.2 presents BCP considered as part of other policies of banks. 62 percent of the banks have BCP that is embedded in other policies. Most banks have a BCP policy included in the ICT operation policy (88 percent) followed by the Asset Liability risk management policy (58 percent) and Business Operation policy (57 percent), respectively which is shown in the following diagram.

Figure 5.2: Business Continuity Plan with Other Policies



Source: Questionnaire Survey

5.8 Separate BCP and Contents Thereon

76 percent of the bank has a separate policy. Banks that do not have any separate policies regarding BCP are planning to formulate separate ones. Most of the respondents opined that the BCP policy is approved by the board. They also focused on some key, diversified and vital components that are included in the present BCP which are shown in the following box.

Box 5.4: Present Contents of BCP

- Resources Allocation and Fallback Plan and Backup and Restore Management
- Emergency Action Plan and Incident Response
- Disaster Declaration and BCP Testing
- Training and Awareness and Define Responsibilities
- Define RTO and RPO and Risk Assessment
- Business Impact Analysis and Critical Elements of Business Continuity Planning
- Scope of Business Continuity Plan and Objectives of Business Continuity Plan
- Recovery Site and BCP Core Team
- Emergency Management Team and Damage Assessment Team
- Administrative Support Team and IT Support Team
- Business Continuity Plan for Departments and BCP Co-coordinator
- Communication with the media and Disaster Recovery Plan and Site

Source: Questionnaire Survey

The survey result shows that most of the banks' focus is on technology-based BCP, which is approximately 86 percent of the respondents. Business BCP and operational BCP, on the other hand, are 71 and 73 percent,

respectively. It is to be noted that 76 percent of the respondents' banks plan to revise their BCP shortly. Box-5.5 shows some of the contents that they are planning to add to their BCP.

Box 5.5: New Issues to be Added in the updated BCP

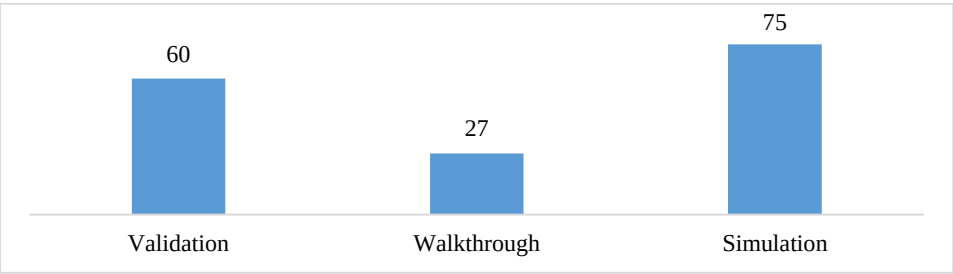
- Business BCP, Operation BCP, and Cyber Security
- Regulatory Implications
- Carry on with operations and business in the event of a pandemic
- Revised business impact analysis considering local and global markets
- Integrating BIA and risk assessment for critical assets and process for determining RTO and RPO
- Updating the roles and responsibilities of Business Continuity Management Teams
- Update calls tree and communication process.
- Specific scenario-based Business Continuity Plan [e.g. Fire or Earthquake].

Source: Questionnaire Survey

5.9 Types of BCP Testing by Banks

Regarding BCP testing, it is seen that only 71 percent of the responding banks usually test their BCP periodically. The survey results also show that 93 percent of the banks test their BCP once a year, and the rest of the banks test their BCP two or three times a year. The following Figure-5.3 shows that most of the banks (75 percent) test their BCP using simulation. It is also seen that banks carried out BCP testing in technology (87 percent), operations (73 percent), and business (67 percent). However, banks focus on technology BCP testing compared to operation and business BCP testing.

Figure 5.3: Types of BCP Testing (% of Banks)



Source: Questionnaire Survey

5.10 Employees' Training on BCP

Regarding the status of employee training, most of the respondents informed staff are trained by the bank's training institute (86 percent), only a few get training at other training institutes (38 percent). Three fourth of the respondents replied that they have separate training designed for BCP although only a two-third of them could receive it. Details about the BCP training are presented in Table-5.3.

Table 5.3: Training on BCP Status

Questions	Response (Yes) in %
Do you have any internal Training Program designed for the implementation of a Regular Business Plan?	67
Do you have any internal Training Program specially designed for the implementation of BCP?	76
Have you ever received any special training on BCP?	67

Source: Questionnaire Survey

5.11 Status of Critical Service Management

For the seamless functioning of banking activity, banks must engage officials in Critical Service Management as directed by Bangladesh Bank. As seen in box-5.6, banks approach this Critical Service Management service in three ways. Banks use the corporate, functional, and team methods of management. The stated important players who are involved in banks' Critical Service Management techniques are represented by Box-5.6

Box 5.6: Critical Service Management Approach

• Managing Director & Chief Executive Officer (CEO) • Chief Risk Officer (CRO) • Chief Financial Officer (CFO) • Chief Anti-Money Laundering Officer (CAMLCO) • AMD • DMD	• Head of Information Communication and Technology • Head of Branches Operation and Control Division • Head of Investment Risk Management Division • Head of Enterprise Architecture (HoEA) • Head of Legal Affairs • Head of Branding and Communication	• Business Continuity Management Team (BCMT) • Crisis Management Team (CMT), • Risk Management and Business Impact Analysis Team (RA&BIAT) • Disaster Recovery Team (DRT). • CBS Team

Source: Questionnaire Survey

The aforementioned significant individuals or teams are given important duties by banks which is shown in Box-5.7.

Box 5.7: Functions of the Key Listed Persons Engages in Critical Service Management

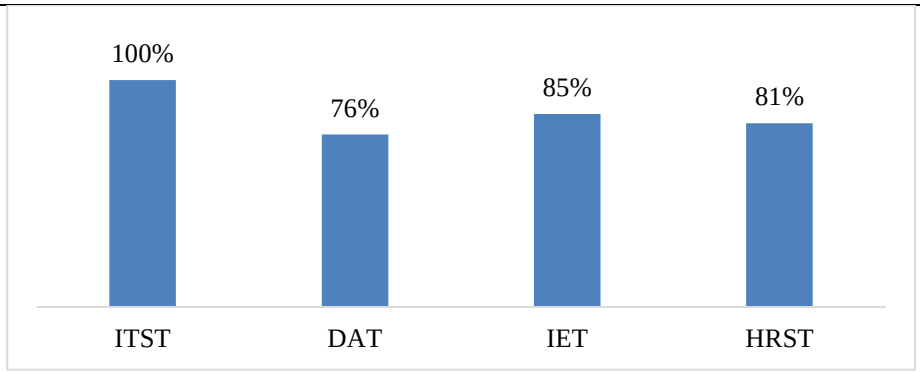
- The listed key personnel are for ensuring the proper operation of the critical services as well as conducting the recovery efforts for business continuity in case of occurrence of any disaster.
- Among the BCP teams, The BCMT has overall authority over the recovery of services and assets during catastrophic events.
- BCMT is to observe the events and ensure appropriate actions are carried out based on the impacts of the event as well as determining the extent of damage to the involved facility, systems, services, and infrastructure.
- The RA&BIAT has responsibilities to develop strategies to mitigate the identified risks and analyze the business impact of these risks. Determining the loss from service interruption during any disaster and defining the recovery time, prioritizing the services for resumption by loss calculation is also their job.
- The DRT is responsible for the formal recovery operation that begins after the activation of BCP. DRT focuses on implementing recovery strategies to restore system capabilities, repair damage, and resume operational capabilities from the Disaster Recovery Site (DRS).
- Managing Director or CEO recognizes the incident and ensures all the right personnel is involved for business continuity and recovery.
- Head of Security will assign the right Division/Person for business continuity accordingly.
- Chief Risk Officer ensures the probable risk that might occur.
- Head of Information Technology ensures that the technical operation is up as soon as possible.
- Finance in charge will ensure to recover the financial loss during any incident.

Source: Questionnaire Survey

5.12 Business Continuity Management Team

All the banks have IT support team followed by Infrastructure Enabling Team (IET) (85%), HR Support Team (HRST) (81%) and Damage Assessment Team (DAT) (76%) which is shown by the following figure 5.4. So, it is observed that, IT support team is dominating in all the banks. along with the above team, there are designated ITST Officer, DAT Officer, IET Officer and HRST Officer to support the team.

Figure 5.4: Business Continuity Management Team

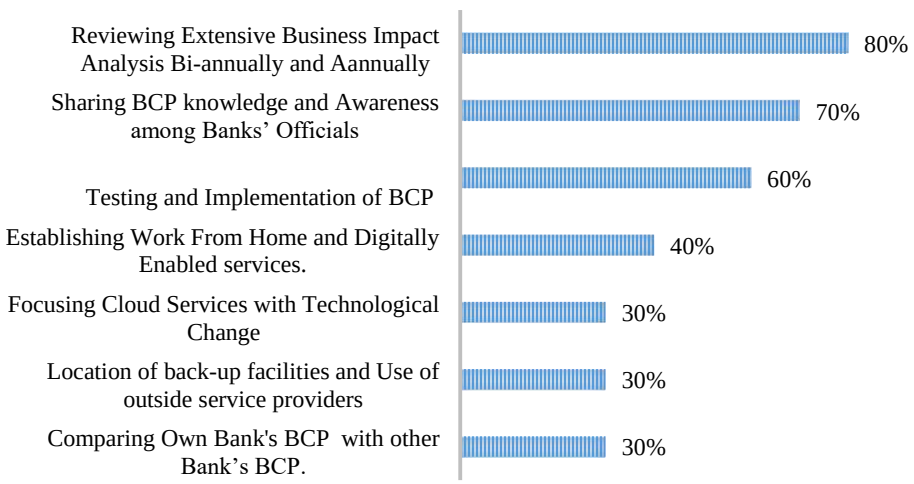


Source: Questionnaire Survey

5.13 Future Lookouts and Implementation Challenges of BCP in Banks

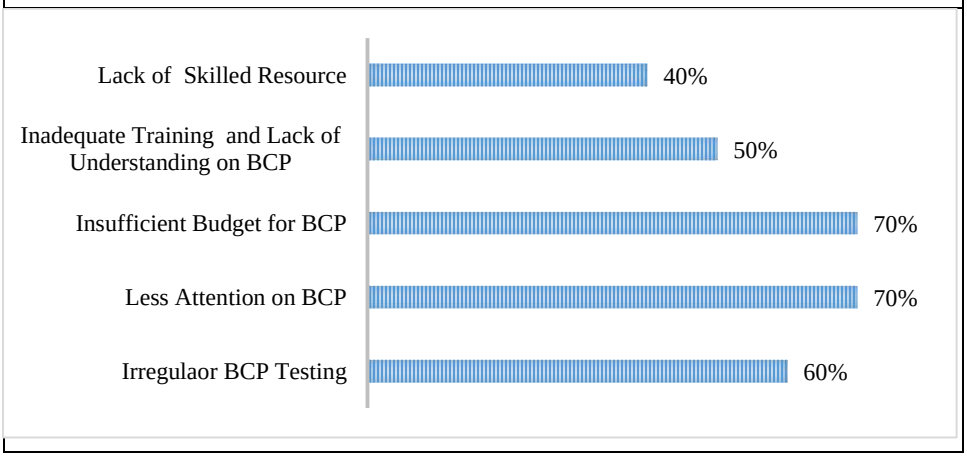
To ensure the success of BCP as a whole and its implementation, respondents were also asked about BCP's upcoming challenges in the years to come. Additionally, the COVID-19 pandemic has given a chance to improve operational and response processes for business continuity and crisis management. Respondents brought up a few concerns that banks should concentrate on in the upcoming years (Figures 5.5 and 5.6). 80 percent of the respondents emphasized for extensive reviews of BIA and 70 percent brought the importance of sharing BCP knowledge.

Figure 5.5: Future Outlooks on BCP: Banks Responded



Number of challenges have been noticed by the respondents but insufficient budget for BCP and Less attention on BCP have received high attention which are 70 percent each.

Figure 5.6: Challenges to Implement BCP

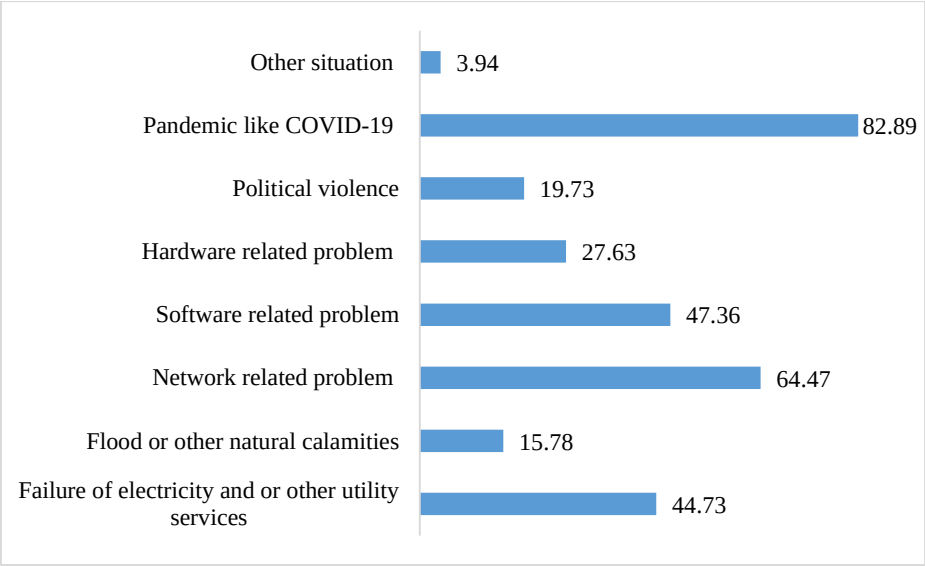


Source: Questionnaire Survey

5.14 Perceptions of the Mid-level Bankers' Regarding BCP

A study was conducted among 100 mid-level officials of 30 different banks regarding BCP. Out of the respondents as 93 percent were familiar with the term BCP. From this, we can deduce that the banking industry is well aware of this term. It is found that 86 percent of the respondents believe that BCP has priority for banks. This is a good sign for the whole banking industry that it is recognized by banking officials. 86 percent of the respondents faced a situation like IT-related problems (hardware, software, and network error-related problems), electricity outages, natural calamities, political violence, flood, and other natural calamities including recent pandemic where regular banking activity was interrupted.

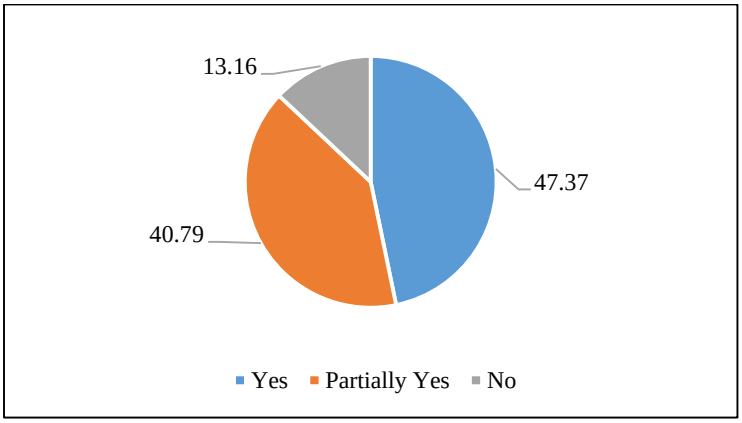
Figure 5.7: Disaster Situation Faced by the Bankers



Source: Questionnaire Survey

Almost the majority of the respondents confirmed that there is a single point of contact to handle the various types of distractions like a failure of electricity and or other utility services, floods or other natural calamities, network-related problems, software-related problems, hardware-related problems, political violence, Pandemic such as COVID-19. 47 percent of the respondents illustrated that they have a designated and formal single point of a contact and 41% have mentioned about an informal point of contact.

Figure 5.8: Point of Contract during Crisis



Source: Questionnaire Survey

About half of the respondents are familiar with the concept of BCP although most of them know the term and most of the respondents have confirmed receiving training in BCP. The majority of the respondents firmly believe that all employees should be involved in the BCP process from the top management to the beginning level (Figure-5.8).

5.15 Summary of Focus Group Discussion (FGD)

The research team conducted an FGD comprising 30 senior-level bank executives of different banks to validate the questionnaire survey. They also put their thoughts on the issues and challenges of the implementation of BCP in the banking sector of the country. Box-5.8 is the summary of their discussions**.**

Box 5.8: Summary Outcomes [Issues/Challenges] of Focus Group Discussion (FGD)

- Almost all banks have a long-term strategic plan. However, some banks don't include BCP in their strategic plan. (85%)
- Most banks are accustomed to the concept of Business Impact Analysis (BIA). But they relate BIA to IT issues by ignoring financial and operational issues. (90%)
- Most banks have BCPs. Some of them are separate and some embedded in their ICT policy. (85%)
- All BCPs are approved by the board. Most of the banks have technology BCP. (90%)
- The banks, which don't have a separate plan regarding BCP, are working to make it separate. Instead of a specific BCP, they want to develop a general BCP. (70%)
- Some banks have a quick response team to tackle the adverse situation during the Covid-19 period. (80%)
- Culture is the main challenge of BCP. The foreign and some private commercial banks have already implemented BCP, whereas others are lagging, and BCP is costly to maintain. (78%)
- There is not sufficient and skillful manpower to prepare and implement separate BCP. BCP is made with the help of bankers from different departments. So, they feel extra work pressure and the plan is not up to the mark for this reason. (66%)
- There is hardly any drill to test BCP due to excessive cost, lack of support, insufficient tools, and willingness of top management. (88%)
- Lack of monitoring of BCP formulation and implementation. (90%)

- Implementation of awareness-related programs to BCP and BCP-related issues should be included in the Annual Risk Conference, Annual Business Conference, and Annual BAMALCO conference. (75%)
- Business Impact Analysis (BIA) will determine the critical management area. (90%)
- BIA should include financial, operational, and reputational aspects immediately which ensure the sustainability of the banking industry. (80%)
- Critical Services Management should include Core banking solution, SWIFT, uninterrupted service, disaster recovery, card Services, etc. (85%)
- Priorities of BCP are to form **a** Quick response team, technology, Disaster response plan guideline, Smooth Operational activities, ensuring Staff training, Vendor, and Key dependencies (IT support team, stakeholder, premises). (90%)
- Few banks have separate plans and teams for the severe situation and they would conduct their operations from nearby branches in times of flood in Sunamgonj, Netrokona etc. (70%)
- Creating national data center for all banks in a single place may be created to reduce cost. (80%)

Source: FGD

6.0 Recommendations Based on Issues Raised in the Roundtable Discussion

The purpose of the study is to explore the depth of concept of Business Continuity Plan in the banking industry of Bangladesh. In attainting the objective, the research team has disseminated the concept, policy formulation and procedure of BCP and examined the implementation status of BCP. On the basis of our works and findings, the following issues are pertinent for discussion of the distinguished participants.

One, as evidenced in the literature, BCP is based on the BIA. As BIA procedure develops regulations, describes the probable effects of crisis events, and aids in economic recovery. Its goal is to safeguard personnel and property before, during, and after an emergency. The study reveals that BIA should include financial, operational, and reputational components of banks. However, banks relate BIA to IT issues by ignoring financial and operational issues. So, banks should develop proper strategy to analyze in-depth Business Impact Analysis (BIA) in the nation's banking industry, given the significance of BIA.

Two, Although BCP has many advantages for an organization, however, people generally do not like to think about unfavorable incidents or terrible business conditions. Additionally, a common belief is that *"it won't happen here."* The survey also shows that the concept of BCP is not well known at all levels of employees. Our analysis also finds a similar problem in the country's banking industry, which results in less focus on BCP, which is also beset by a lack of funding. How, therefore, banks should organize adequate training and awareness programs regarding BCP in all facets of banks.

Three, Proper policy, procedures, and control mechanisms are essential components of a successful BCP. Our research reveals that banks rarely conduct BCP drills as a result of high costs, and a lack of top management commitment. The study finds that another crucial element is having adequate and knowledgeable people to create and implement distinct BCP policies in all areas of banking. The survey also reveals that some banks establish BCP plans with the assistance of executives from several departments of the bank, which adds to the workload. Additionally, the majority of banks lack a recognized and formal point of contacts for disruption related issues. In this context, Banks might develop a focused team for formulating BCP policy, procedures, and control mechanisms.

Finally, the literature demonstrates that several authors have defined the BCP process in a variety of ways. The study team has developed a standard BCP process with nearly all of the components based on the literature and questionnaire survey. So, all banks might adopt an uniform BCP process to attain uniform practice across all the banks in the country.

In conclusion, the study shows that most of the bankers remained with common five core risk areas of banks as per core risk management guidelines of Bangladesh Bank in identifying the risk areas other than IT risk. However, BCP is not limited to the core risks of banks only, rather bankers should have a capacity to identify all critical functions and other risk areas in banking operations and businesses. In this context, necessary activities and trainings can be taken up. Further research could be undertaken to find the ways to broaden the understanding of the bankers to

determine critical functions and risk areas in banks. Starting from typical DRS, and crisis management, BCP has taken the shape of an all-encompassing, "umbrella" term and has further invited the overall Business Continuity Management (BCM). Moreover, given the importance of BCM, BCBS, in its 7 High Level Principles of Business Continuity, has also emphasized BCM reviews by financial authorities to incorporate ongoing assessment of the financial industry participants for which they are responsible.

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Planning Guide for Area Business Continuity ~ Area BCM Toolkits ~ Version 2 Main Volume March 2015 AHA CENTRE Japan International Cooperation Agency OYO International Corporation Mitsubishi Research Institute, Inc. CTI Engineering International Co., Ltd.

Appendix 1: Questionnaire for Banks

Bangladesh Institute of Bank Management
Mirpur-2, Dhaka

Questionnaire for the Roundtable Discussion on

"EXPLORING THE CONCEPT OF BUSINESS CONTINUITY PLAN IN THE BANKING SECTOR OF BANGLADESH"

(To be filled in by the CRO, CFO, CAMLCO, COO, CRM, CTO / Equivalent Executive of the Bank)

Respondent Name	
Designation	
Department/Division	
Name of the Bank	
Mobile	
Email	

1. **Please put (√) marks against the following areas where you have a separate policy / procedural guideline / plan.**

General Banking and Operations		Credit/Investment		Foreign Trade and Foreign Exchange	
Information Technology and its Security		Anti-Money Laundering and CFT		Know Your Customer and Customer Acceptance	
Internal Control and Compliance		Treasury and Asset Liability Management		Capital and Share Management	
Human Resource Recruitment and Management		Employee Discipline, Reward and Punishment		Outlet and Service Network Development	
Service Provider Employment and Management of Vendor		Purchase, Procurement and Depreciation		Ledger and Accounting	
Reporting and Management Information System		Subsidiary and Agent Management		Other (if any) …. please specify	

SL No.	Question	Response	
2.	Does your bank prepare and follow business targets and budgets from year to year?	□ Yes	□ No
	If yes, which issues get priority in the yearly plan/target/budget?		
3.	Does your bank prepare and follow Strategic Business Plan every three/five-year basis?	□ Yes	□ No
4.	Does this Strategic Plan include any item like BCP?	□ Yes	□ No
5.	What is your understanding about Business Continuity Plan?		
6.	Do you feel BCP gets any priority for banks? □ Yes □ No If yes; what are those priorities?		
7	Are you familiar with the exercises like Business Impact Analysis (BIA)?	□ Yes	□ No
	If yes, does it mean for impact on financial status?	□ Yes	□ No
	If yes, does it mean for operational area?	□ Yes	□ No
	If yes, does it mean for Information Technology area?	□ Yes	□ No
8.	In which areas of operation and business a BCP is directly required / effective?		
9.	In which other areas of banking the BCP may have indirect effect?		

10. Please mention five risk areas of your bank **other than Information Technology**

Risk Area other than I T	Possible events of risks in the concerned area

11.	Is the Business Continuity Plan (BCP) is considered as a part of your other policy / plan?	□ Yes	□ No
	If yes, then please specify BCP is the part of which Policy?		
12.	Is there any separate BCP prepared by your bank?	□ Yes	□ No
	If not then do you have any program to prepare a BCP?	□ Yes	□ No
	If yes, how old is this BCP?	□ Yes	□ No
	If yes, this BCP was approved by whom? (put (√) marks) Board of Director / SMT / MANCOM / Managing Director		
	If yes, what are the present contents of your BCP?		
13.	If yes, your BCP is focussed at:		
	Tech BCP	□ Yes	□ No
	Business BCP	□ Yes	□ No
	Operation BCP	□ Yes	□ No
14.	If yes, do you have any plan to revise the BCP in near future?	□ Yes	□ No
	If yes, what are the new points/issues should be added?		
15.	If yes, was the BCP tested?	□ Yes	□ No
	If yes, the what are the BCP Testing Frequency? (put (√) marks) □ Once in a year □ Twice in a year □ More than that If yes, please mention the types of BCP Testing carried in your bank. (put (√) marks) □ Validation □ Walkthrough □ Simulation Test If yes, your BCP testing is carried on □ Tech BCP □ Business BCP □ Operation BCP		

16.	How do the employees of your bank receive trainings? Own training institute Other training institute Any other (please specify)		
17.	Do you have any internal Training Program designed for implementation of Regular Business Plan?	□ Yes	□ No

18.	Do you have any internal Training Program specially designed for implementation of BCP?	□ Yes	□ No
19.	Have you ever received any special training on BCP?	□ Yes	□ No
20.	Who are the listed Key Persons engaged in Critical Service Management of your Bank? We do not have any list as such. (put (√) mark if you do not have any) Following executives are in the list:		
21	What are the functions of the listed key persons?		
22.	Does your Bank have either or all of the Following Teams?		
	IT Support Team (ITST)	□ Yes	□ No
	Damage Assessment Team (DAT)	□ Yes	□ No
	Infrastructure Enabling Team (IET)	□ Yes	□ No
	HR Support Team (HRST)	□ Yes	□ No
23.	Who belong to the Business Continuity Management Team at present?		
	ITST Officer	□ Yes	□ No
	DAT Officer	□ Yes	□ No
	IET Officer	□ Yes	□ No
	HRST Officer	□ Yes	□ No

24. Give your valuable comments on Future Look Out on BCP in your bank.

Appendix 2: List of Respondent Banks

SL	Bank Name
1	Bangladesh Commerce Bank Ltd.
2	Bangladesh Development Bank Ltd.
3	Bank Asia Ltd.
4	BRAC Bank Ltd.
5	Dutch-Bangla Bank Ltd.
6	Dhaka Bank Ltd.
7	First Security Islami Bank Ltd.
8	Islami Bank Bangladesh Ltd.
9	IFIC Bank Ltd.
10	Habib Bank Ltd.
11	Mercantile Bank Ltd.
12	Mutual Trust Bank Ltd.
13	Padma Bank Ltd.
14	Pubali Bank Ltd.
15	Rajshahi Krishi Unnayan Bank.
16	Shimanto Bank Ltd.
17	Shahajalal Islami Bank Ltd.
18	South Bangla Agriculture and Commerce Bank Ltd.
19	The City Bank Ltd.
20	United Commercial Bank Ltd.
21	Union Bank Ltd.
22	One Bank Ltd.
23	Uttara Bank Ltd.
24	Sonali Bank Ltd.
25	United Commercial Bank Ltd.
26	Prime Bank Ltd.
27	NRB Bank Ltd.
28	Al-Arafah Islami Bank Ltd.
29	Standard Bank Ltd.
30	Jamuna Bank Ltd.

Appendix 3: List of Participants in FGD from Banks

Sl No.	Name	Designation	Bank Name
1.	Mr Nizam Ahmed	SEVP & Divisional Head Br. Operation Div.	National Bank Ltd.
2.	Mr A K M Salah Uddin Khan	SVP & Divisional Head Marketing Div.	
3.	Mr. Md. Naquibul Islam	EVP & Head Banking Operations Div.	Shahjalal Islami Bank Ltd.
4.	Mr. S. M Azharul Islam	EVP & Head, ID	First Security Islami Bank Ltd.
5.	Mr. Md. Alamgir Hossain	SVP & Head, Invt. Div.	
6.	Mr. Md. Towhid Hossain	EVP & Head, IRMD	Social Islami Bank Ltd.
7.	Mr Md Ashraful Hasan	Chief Operating Officer (Interim) and Head of Performance Services	The Hongkong and Shanghai Banking Corporation Ltd.
8.	M M Ariful Islam	Manager, Business Continuity and Incident Management	
9.	Mr. Md. Sabbir Hossain	DMD and Chif Operating Officer, COO's	BRAC Bank Ltd.
10.	Ms. Nurun Nahar Begum	Chief Technology Officer, Technology	
11.	Mr. Khaled Bin Kamal	Head of Risk Mgt. Unit	
12.	Mr. Najmus Sakeb Jamil	Head of Technology Infrastructure and Systems Mgt., Technology	
13.	Mr. Muhammad Ali Talukder	Head of Branch Governance and Regional Head, Distribution Network	
14.	Mr. Md. Muniruzzaman Molla	Head of Operations, Operations	
15.	Mohammad Jashim Uddin	SEVP & Head, Risk Mgt.	Prime Bank Ltd.
16.	Syed Sazzad Haider Chowdhury	SEVP & COO, Operations	
17.	Md. Feroz Al Azad	EVP & Head, ICCD	
18.	A. Y. M. Mostafa	EVP & Head, IT Division	
19.	Md. Mahbubul Alam	VP & Head, Information Security Division	
20.	Md Abdullah Al Mamoon	Deputy Managing Director & Chief Operating Officer	United Commercial Bank Ltd.
21.	Mohammed Tanvir Chowdhury	FAVP & Head of Risk Mgt.	

22.	Md. Maskur Reza	Head of Business Information System, MD's Secretariat	Eastern Bank Ltd.
23.	Mr. Md. Abedur Rahman Sikder	Deputy Managing Director	Dutch-Bangla Bank Limited
24.	Mr. Shakir Amin Chowdhury	Deputy Managing Director	NRB Bank Ltd.
25.	Mohammed Zabed Amin	DMD & COO	Padma Bank Ltd.
26.	Syed Towhid Hossain	EVP & Head of BOD	
27.	Mr. S. M. Mainul Kabir	DMD & Chief Business Officer	Community Bank Bangladesh Ltd.
28.	Mr. Md. Benozeer Ahmed	EVP & CFO	

Paper Three

CMSMEs' Access to Finance in Bangladesh: Scope for Alternative Financing Options

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Vice President, Eastern Bank Limited

List of Abbreviations

ADB	Asian Development Bank
ADC	Alternative Delivery Channel
ATMs	Automated Teller Machines
BB	Bangladesh Bank
BIBM	Bangladesh Institute of Bank Management
CMSME	Cottage, Micro, Small and Medium Enterprise
CMSE	Cottage, Micro, and Small
FCB	Foreign Commercial Bank
GDP	Gross Domestic Production
IB	Islamic Bank
IDBP	Inland Documentary Bills Purchase
LTR	Loan against Trust Receipt
MFI	Microfinance Institute
NBFI	Non-bank Financial Institution
NGO	Non-government Organization
OD	Overdraft
PCB	Private Commercial Bank
POSTs	Point of Sales Terminals
RSFs	Risk-sharing Facilities
SB	Specialized Bank
SE	Small Enterprise
SFBs	Small Finance Banks
SME	Small and Medium Enterprise
SMESPD	SME & Special Programs Department
SOCBs	State-owned Commercial Banks
STL	Short Term Loan

Executive Summary

Cottage Micro, Small and Medium Enterprises (CMSMEs) are the influential foundations of economic development, employment creation and for innovation of any country in the world. In both developed and developing counties, this sector provides fuel for industrial development, exterminating regional discrepancies and backward linkage support for larger organizations. In most of the developing countries, CMSMEs are labor oriented sector which serve those market areas where the operations of large firms are mostly absent. Although CMSME sector in Bangladesh is viewed as one of the best choices to enhance GDP growth, minimize poverty level, and create more employment (Begum & Abdin, 2015; Mamun et al., 2022a), this sector faces various difficulties for business start-up, facilitating investments, supporting business operations and ensuring growth potential. Such difficulties revealed both from the corner of demand and supply side and sometime produces dilemma when demand side considers that the problem exhibit in supply side and vice-versa.

Considering the importance of the sector, many banks and other market players like Non-Banking Financial Institutions (NBFIs), Non-Government Organizations (NGOs), Micro Finance Institutes (MFIs), multipurpose cooperatives, informal money lenders, samities, etc. provide financing to the CMSMEs, to some extent, these are not sufficient compared to meet their financing needs (Mamun et al, 2022b). In this context, to increase access to finance in the sector, some other alternative financing options are highly desirable besides existing banking products and mechanisms. Based on these realities, the main objective of the study is to examine the scope for alternative financing options for CMSMEs' access to finance in Bangladesh.

The study mainly used secondary sources in order to achieve the study objectives. In this context, the data from Bangladesh Bank SME portal has been considered. The study used SME, MSME and CMSME interchangeably for the purpose of data availability and literature. Moreover, extant literature, research papers, book chapters have been reviewed.

The contents of this paper are organized into seven sections. Section-1 covers the introduction, background, objectives and methodology of the study; Section-2 reviews the existing policies for CMSME financing with some initiatives. Section-3 shows the CMSME financing scenario in Bangladesh; Section-4 highlights the existing financing products and mechanism of banks. Section-5 presents the

CMSME access to finance and finance Gap. Section-6 identify the alternative financing options for CMSME financing and Section-7 recommendations and conclusion.

Alternative financing refers to financing that is accessible outside the conventional large banks. It provides entrepreneurs with a wider range of options and more flexibility when selecting financial services solutions. Alternative financing categorically refers to a class of financing solutions, such as debt and venture capital that fill in holes in traditional financial markets. This study identified a number of alternative financing products and approaches like: *Factoring; Purchase Order Finance; Warehouse Receipt Finance; Leasing; Securitization; Crowdfunding; Risk-sharing Facilities (RSFs); Market place (peer-to-peer) Lending; Revenue based financing; Mezzanine finance; Venture capital; Business angels; Finance from Grant; Small Finance Banks (SFBs); and Capital Market.*

Some key considerations for developing alternative financing options are as follows:

- Comprehensive regulations covering all kinds of access to credit available to CMSEs.
- Establishing of sound, thorough, enforceable, and fair legislative framework.
- Market conduct/client protection.
- Effective and comprehensive credit information system.
- One of the main causes of the limited utilization of some of the available alternative mechanisms is the level of awareness.
- Guaranteeing data protection and privacy rights through proper legislative frameworks to limit the hazards caused by the rising digitalization of CMSEs.
- Coordination with other ministries and regulatory agencies.
- Authorities should make sure grants (from governments and other sources) are administered in a way that benefits the target market.
- The capital market is developed in a way that is CMSE-friendly.

CMSMEs' Access to Finance in Bangladesh: Scope for Alternative Financing Options

1. Introduction and Background

Cottage Micro, Small and Medium Enterprises (CMSMEs) are the influential foundations of economic development, employment creation and for innovation of any country in the world (Srivastava, 2020). In both developed and developing counties, this sector provides fuel for industrial development, exterminating regional discrepancies and backward linkage support for larger organizations (Manna and Mistri, 2017). In Asia and the Pacific region, MSMEs account for more than 90 per cent of all enterprises and almost the major source of incomes and employment (ADB, 2020). In most of the developing countries, CMSMEs are labor oriented sector which serve those market areas where the operations of large firms are mostly absent (Maksimov, Wang, & Luo, 2017). Even in the social point of view, for resource allocation and reducing regional disparity CMSME sector is more prolific compared to its counterpart. World Bank (2018) statistics shows that SME constitute about 90% of businesses and more than 50%t of world's employment. The contribution of formal sector SMEs up to 40% of GDP and these contributions would be much higher when informal SMEs are included (World Bank, 2018). Besides, the sector contributes towards increasing export earnings, creating new entrepreneurs, and fulfilling the necessities of most of the large firms (Hossain & Ibrahim, 2020).

Considering the contributions of CMSMEs' to the economy, it is highly desirable to focus more for developing the sector. LightCastle Partners (2020) finds that SME sector contribute about 25% to the GDP in Bangladesh, generate 70 to 80% of the non-agricultural employment and up to 40% of the manufacturing output. Regardless of having enormous potential, the contribution of this sector to the country's GDP is still lower than many other neighboring countries. Despite having multi-various problems exhibit in CMSME sector, many of the researchers and academicians still viewed the sector as one of the best options to augment

GDP growth, reduce poverty, and create more employment (Begum & Abdin, 2015; Mamun et al., 2022).

Although CMSME sector in Bangladesh is viewed as one of the best choices to enhance GDP growth, minimize poverty level, and create more employment (Begum & Abdin, 2015; Mamun et al., 2022), this sector faces various difficulties for business start-up, facilitating investments, supporting business operations and ensuring growth potential. Such difficulties revealed both from the corner of demand and supply side and sometime produces dilemma when demand side considers that the problem exhibit in supply side and vice-versa. Now a days, considering the importance of the sector, many banks and other market players like Non-Banking Financial Institutions (NBFIs), Non-Government Organizations (NGOs), Micro Finance Institutes (MFIs), multipurpose cooperatives, informal money lenders, samities, etc. provide financing to the CMSMEs, to some extent, these are not sufficient compared to meet their financing needs (Mamun et al, 2022). In this context, to increase access to finance in the sector, some other alternative financing options are highly desirable besides existing banking products and mechanisms. Based on these realities, the study attempted to explore the alternative financing options for catering the financial needs of the CMSMEs in Bangladesh.

1.1 Objectives

The main objective of the study is to examine the scope for alternative financing options for CMSMEs' access to finance in Bangladesh. Thus, the specific objectives of the paper are to:

(i) show the CMSME financing scenario in Bangladesh,

(ii) highlight the existing financing products and mechanism of banks,

(iii) find out the CMSME access to finance and finance Gap,

(iv) identify the alternative financing options for CMSME financing.

1.2 Organization of the Study

The contents of this paper are organized into seven sections. Section-1 covers the introduction, background, objectives and methodology of the study; Section-2 reviews the existing policies for CMSME financing with some initiatives. Section-3 shows the CMSME financing scenario in Bangladesh; Section-4 highlights the existing financing products and mechanism of banks. Section-5 presents the CMSME access to finance and finance Gap. Section-6 identify the alternative financing options for CMSME financing and Section-7 recommendations and conclusion.

1.3 Data and Methodology

The study mainly used secondary sources in order to achieve the study objectives. Secondary information has been used to show the CMSME financing scenario in Bangladesh. In this context, the data from Bangladesh Bank SME portal has been considered. The study used SME, MSME and CMSME interchangeably for the purpose of data availability and literature. Moreover, various existing literature, research papers, book chapters have been studied to establish theoretical background and applicable websites have gone through to collect secondary information.

2. Existing Policies for CMSME Financing

In Bangladesh, different stakeholders are working in developing CMSMEs and several initiatives are in place to facilitate the financing requirement of the CMSMEs. Some of the policy initiatives of the Government of Bangladesh and Bangladesh Bank, the central bank of Bangladesh is discussed below:

2.1 Government of Bangladesh

The Ministry of Industry, one of the various government ministries in Bangladesh, implements a variety of efforts to improve the climate in which financial institutions can engage in CMSME financing activities. The Bangladesh government has been continuously concentrating on developing policies since it is aware of how crucial CMSMEs are to the economic prosperity of the nation. Due to this, in 2005, the government

created a SME policy, which was later modified in 2019. The goal of the SME sector development program launched by the ministry of industry in 2007 was to assist government initiatives aimed at accelerating the development of the SME sector by enhancing SMEs' access to financing and related services as well as strengthening the regulatory environment for SMEs. The Industrial Policy 2010 has placed a strong emphasis on the development and balanced expansion of the SME sector as part of the government's ongoing efforts to do so. The Bangladesh government is concentrating on expanding employment opportunities in the public and private sectors, creating effective backward and forward linkage industries, advancing domestic technology through research, and fostering skill development in the CMSME sector through various Industrial Policy (2005, 2010, 2016, 2021).

2.2 Bangladesh Bank, The Central Bank

The central bank of Bangladesh, Bangladesh Bank (BB), has taken a very proactive stance in formulating helpful policy decisions and offering advice to banks and non-bank financial organizations on how to finance small businesses. As an illustration, the Bangladesh Bank created the Prudential Regulations for Small firm Financing (2004) and the SME Credit Policies & Programmes (2010) that enable the banking industry to actively participate in small firm financing activities. Additionally, Bangladesh Bank hosts events like road shows and monitors SME centers.

In 2004, 13 prudential requirements were added to the rules governing small business lending. The sources of funding, repayment capacity, cash flow-backed lending, as well as personal guarantees, per-party exposure limits, a bank's or NBFI's overall exposure to the SE sector, a cap on clean facilities, securities, loan documentation, margin requirements, Credit Information Bureau (CIB) clearance, the minimum condition for taking exposure, proper loan utilization, restrictions on facilities to related parties, classification, and provisioning for assets are all covered by these regulations. In addition to these rules, it also stipulated development guidelines, which include policy guidelines (product program guidelines, segregation of duties, credit approval, and credit approval authority), procedural guidelines (approval

process, maintenance of negative files), credit administration (credit documentation, disbursement, custodial duties, compliance requirements), risk management (credit risk, third party risk, fraud risk, liquidity and funding risk, political and legal risk), and development guidelines (approval process, maintenance of negative files). This thorough set of recommendations was prepared by the central bank to make it possible for the country's small businesses to continue to be financed by the formal financial institutions. A policy-induced barrier to small business financing does not exist, according to our analysis of Bangladesh Bank's policy guidelines.

The 'SME Credit Policies and Programmes 2010' are a further policy push for the financial institutions to involve in small business lending and were established by Bangladesh Bank in addition to the prudential regulations of 2004. This document primarily focuses on the steps taken by Bangladesh Bank aimed at development of SME, target for SME credit, area approach method, cluster development policy, priority to the small entrepreneurs, priority to refinance in industry (manufacturing) and service sector, special prearrangement for women entrepreneurs, real women entrepreneurs' identification, eligibility of the borrower, training programs, methods of monitoring of SME credit, and SME service center.

Finding prospective SME clusters across industries in Bangladesh has been the biggest accomplishment of this policy publication. The financial institution's decision to use the cluster approach and area approach to finance small businesses is greatly aided by this. Additionally, Bangladesh Bank has launched a variety of refinancing options to offer low-cost funds for funding small businesses by financial institutions supported by various foreign organizations including the Asian Development Bank (ADB), IDA, JICA, and so on. Financial institutions have already implemented a variety of steps to make small business borrowing easier, largely at Bangladesh Bank's directive.

3. CMSMEs and Its Financing Scenario in Bangladesh

3.1 CMSME Definition

A number of definitions on CMSME have been found in different research works and still policy makers and researchers have failed to come up with a unanimous definition of it. SME/ CMSME definition varies throughout the world based on the policy initiatives of different countries. SMEs are defined by some countries, based on their number of employees or sales volume; asset size; and capital size. Bangladesh Bank provided the master circular[18] to redefine small enterprises and all financial institutions adopted this definition. As per the circular, the definitions are presented in Table-3.1 and Table-3.2.

Table 3.1: Definition of Cottage, Micro and Small Manufacturing and Service Oriented Businesses

Industry Category	Industry	Criteria for Determining Industry Category	
		Total Fixed Asset Including Replacement Cost Except Land and Building	Number of Employee
Cottage	Manufacturing	Below Tk. 10 lac	Not more than 15 including family members and others
Micro	Manufacturing	From Tk. 10 lac to below Tk.75 lac	From 16 to 30 or less
	Service	Below Tk. 10 lac	Maximum 15
Small	Manufacturing	From Tk. 75 lac to Tk.15 crore	From 31 to 120
	Service	From Tk. 10 lac to below Tk. 2 crore	From 16 to 50
Medium	Manufacturing	Above Tk. 15 crore but not more than Tk. 50 crore	From 121 to 300; Maximum 1000 for RMG/labor intensive industry
	Service	From Tk. 2 crore to Tk. 30 crore	From 51 to 120

[18] BB, SMESPD, Circular No-2, September 05, 2019

Table 3.2: Definition of Micro and Small Trading Enterprise

Category of Trading Businesses	Criteria for Determining Trading Category		
	Total Fixed Asset Including Replacement Cost Except Land and Building	Number of Employee	Volume of Business Turnover/Annual Transaction
Micro	Below Tk. 10 lac	Maximum 15	Maximum Tk. 2 crore
Small	From Tk. 10 lac to Tk. 2 crore	From 16 to 50	Above Tk. 2 crore but not more than Tk. 20 crore

3.2 CMSMEs Financing Scenario in Bangladesh

3.2.1 Status of Total Loan, CMSME, Small and Women-Owned Enterprises: Banking Sector

Status of total loan and loans to CMSME, small enterprises and women-owned enterprises are shown in Table-3.3. Total loan of the banking sector increased during 2016-2020. However, the percentage of CMSME loan to total loan experienced a negative growth, though in absolute amount the picture is not that much gloomy. The CMSME loan in 2020 (BDT 149203.64 crore) was below from previous year where COVID-19 may be one of the key reasons. On the other hand, out of total loans to CMSME, the participation of small enterprises was really very encouraging, both in absolute and relative terms, except 2020. This encouraged small enterprises to grow up with their maximum potentialities.

Table-3.1: Status of Total Loan, CMSME, Small and Women-Owned Enterprises: Banking Sector (BDT in Crore)

Year	Total Loan of Banking Sector	Total of CMSME		Small	
		Amount	% of TL	Amount	% of CMSME
2016	713600	136176.22	19.08	53076.18	38.98
2017	848720	153760.73	18.12	67824.19	44.11
2018	968500	152346.94	15.73	88956.33	58.39
2019	1083680	161216.63	14.88	97854.50	60.69
2020	1175000	149203.64	12.70	85893.86	57.56

Source: SME & Special Programs Department, Bangladesh Bank and Financial Stability Report, 2020, Bangladesh Bank

3.2.2 Banking Sector Exposure to CMSMEs by Urban and Rural

During 2017-2019, loan disbursement to CMSMEs increased, though a decline was observed in 2020. In 2020, about BDT 149 thousand crore loans was disbursed to CMSMEs. The share of rural CMSMEs has been increasing gradually, however, it is still quite low (Table-3.4) that needs to be increased to ensure sustainable development in overall CMSMEs in Bangladesh.

Table 3.2: Status of Banking Sector to CMSMEs by Urban and Rural (BDT in Crore)

Year	CMSMEs Disbursements of Banking Sector	Share of CMSEs (%)	Share of Urban CMSEs (%)	Share of Rural CMSEs (%)
2017	153760.73	58.7	82.8	17.2
2018	158132.43	64.6	82.1	17.9
2019	161216.64	71.2	81.3	18.7
2020	149203.64	71.0	77.7	22.3
2021*	82855.99	73.5	79.2	20.8

Source: SME & Special Programs Department, Bangladesh Bank.

Note: *up to June 30, 2021

3.2.3 Exposure of Different Group of Banks to CMSMEs

Loan size and motive behind the disbursed amount by bank-groups are vital for contribution to CMSMEs. Though PCBs, excluding IBs, enjoyed the highest portion of cumulative disbursement (54.9 percent) by all bank groups, it put its least concentration towards lending to rural CMSMEs (16.6 percent) in 2020 and the picture is almost identical as on June 30, 2021 (Table-3.3). Interestingly, the reverse picture has been found with SBs in 2020 when they enjoyed the highest share of total rural CMSMEs (78.9 percent), despite having lowest percentage of cumulative disbursement (1.6 percent) compared to other bank groups.

Table 3.3: CMSMEs Loan Disbursement by Group of Banks (in percentage)

Group of Banks	As of December 31, 2020		As of June 30, 2021	
	Disbursement	Share of Rural CMSMEs	Disbursement	Share of Rural CMSMEs
FCBs	1.77	41.52	1.15	27.90
IBs	33.94	27.44	33.25	27.56
PCBs excluding IBs	54.86	16.58	56.27	15.03
SBs	1.63	78.93	2.18	59.58
SOCBs	7.81	25.37	8.16	19.02
Total Exposure to CMSMEs by Banks	**100**	**100**	**100**	**100**

Source: SME & Special Programs Department, Bangladesh Bank

3.2.4 Alternative Delivery Channels (ADC) to Finance CMSMEs in Bangladesh

At the end July 2021, there were 1,142,395 mobile banking agents and 13,086 agent banking agents (Table-3.4). Number of mobile banking and agent banking customers were 10,27,14,548 and 1,21,92,947 respectively. These alternative delivery channels and their expansion may by supportive for CMSEs financing.

Table 3.4: Status of Alternative Delivery Channels to Finance CMSMEs in Bangladesh (up to July, 2021)

Sl.	Particulars	Total
1.	Credit Card	1777677
2.	Debit Card	23620886
3.	Prepaid Card	954673
4.	Total Card	26353236
5.	Internet Banking Account	3713188
6.	Mobile Banking Agents	1142395
7.	Mobile Banking Customers	102714548
8.	Agent Banking Agents	13086
9.	Agent Banking Customers	12192947
10.	ATMs	12367
11.	POSTs	82449

Source: Economic Trend, Bangladesh Bank

3.2.5 Status of Agent Banking Operations

At the end of June 2021, 28 banks had licenses for agent banking and all of them started their operations. A total of 12,912 agents had 17,145 outlets having 1,22,05,358 accounts (Table 3.5). Previously, banks were mobilizing deposits through the agents' outlets; however, they are also financing through agents now-a-days. More than 3 thousand crore loans were disbursed by the end of June 2021. Considering share of accounts in agent banking services, the top 5 banks are BAL (35.8%), DBBL (33.0%), IBBL (15.6%), AAIBL (3.4%) and Agrani Bank Ltd. (2.7%). List of banks providing MFS, along with their products is presented in Appendix V, and the status of MFIs is shown in Appendix-VI.

Table 3.5: Overview of Agent Banking Activities in Bangladesh

Particulars	June 2020	June 2021	Change (%)
No. of Banks with License	28	28	0
No. of Banks in Agent Banking	23	28	5
No. of Agents	8,764	12,912	47.33
No. of Outlets	12,449	17,145	37.72
No. of Accounts	73,58,190	1,22,05,358	65.87
No. of Female Accounts	34,10,270	56,75,329	66.42
Number of Rural Accounts	63,77,457	1,05,39,163	65.26
Amount of Deposits (BDT crore)	10,220.21	20,379.28	99.40
Amount of Loan Disbursed (BDT crore)	720.54	3,186.29	342.21
Amount of Inward Remittance (BDT crore)	26,650.59	67,954.05	154.98

Source: Quarterly Report on Agent Banking, April-June 2021, BB

4. CMSME Financing: Existing Products and Financing Mechanism of Financial Intuitions

There is no denying fact that for financial and economic development of a country it is the basic requirements to ensure and improve CMSME access to finance. In Bangladesh, the estimated financing gap for CMSME sector is around BDT 237 billion (US$2.8 billion). Bangladesh Ranked 159th out of 190 countries by the 2018 World Bank Group's Doing Business survey for the 'Getting Credit' indicator. For encouraging the effective financial

inclusion of this sector, it is important to address the weaknesses of financial infrastructure. Although banks and non-banks financial institutions are serving CMSE sector with different products and initiatives, these are not sufficient to fulfill the desired need of the sector. Various lending products which are practicing by banks and NBFIs in Bangladesh are shown in Table-4.1:

Table 4.1: CMSME Loan Products - Used by Banks and NBFIs

Sl.	Products (Mostly Used)	Sl.	Products (Limited Used)
1	Cash Credit (CC)	1	Distributor Financing (New)
2	Overdraft (OD)	2	Supply Chain Financing (New)
3	OD (Work Order)	3	Factoring
4	OD (Pay order)	4	Reverse Factoring
5	Short Term Loan (STL)	5	Start Up Financing
6	Time Loan and Term Loan	6	Equity Financing
7	Lease Financing		
8	Bank Guarantee		
9	Letter of credit		
10	Loan against Trust Receipt (LTR)		
11	Inland Documentary Bills Purchase (IDBP)		

For extensive coverage of financial inclusion, Bangladesh Bank has already launched Credit Guarantee Scheme against Financing of CMSME customers. Similarly, commercial bank and other financial institutions also initiate different CMSME-focused lending scheme for the betterment of the sector. Besides, there are pre-bank financing options already has emerged to care young and dynamic small firms.

Financing Mechanism of Financial Intuitions:

Generally commercial banks of Bangladesh extend credit facilities to CMSMEs in the following forms:

1) Term loan/Lease finance/Equity Finance for procurement of fixed assets such as machinery, equipment, furniture & fixture and for civil construction of factory and office building and for business expansion.

2) Other short-term products such as overdraft (OD), Cash Credit (CC), Short-term Loan (STL), Factoring, etc. are used for working capital requirement of the business.

Different banks/financial institutions use their own mechanism to approach CMSME customers for marketing their products. Most of the banks and financial institutions deploy permanent and contractual sales team who are engaged to market CMSE products. They usually go to the customers or customers' business places directly to know their financing needs. Considering their business size, nature of business, turnover of business, collateral and financial capacity of the customers, they offer them for financing.

Some banks/financial institution also use their agent banking in addition sales peoples for selling their CMSE products. Bangladesh Bank has awarded around 28 agent banking licenses with the aim to provide a secure alternative delivery channel of banking services to the underprivileged and under-served population who live in remote locations. The aim is to provide a secure alternative delivery channel of banking services to the underprivileged, under-served population who live in remote locations that are beyond the reach of the traditional banking network. Twenty-four banks have rolled out the service as of September last year. The banks with a notable presence include Bank Asia Ltd., Islami Bank Bangladesh Ltd., Dutch-Bangla Bank Ltd., BRAC Bank Ltd., City Bank Ltd., Mutual Trust Bank Ltd., Al-Arafah Islarni Bank Ltd., Agrani Bank Ltd., NRB Commercial Bank Ltd., and Modhumoti Bank Ltd. Loan disbursement through the agent banking window rose 444 per cent to Tk 2,659 crore in FY21, which was Tk 488 crore in FY20 (Bangladesh Bank, 2021).

BRAC Bank Ltd. ranked top in loan disbursement comprising 62.61 % of the total share. Bank Asia, City Bank, Dutch-Bangla Bank, and Mutual Trust Bank ranked 2nd, 3rd, 4th, and 5th with 22.05%, 12.25%, 1.85%, and 0.49% respectively. Some banks/financial institution use branch relationship officers to approach to CMSME customers for marketing their products either to go their business place or at their bank premises. They also use cross selling techniques to sell their CMSME products to the customers.

Banks and FIs also finance in the cluster CMSMEs. A cluster may be defined as a local agglomeration of enterprises (mainly CMSMEs) which are producing and selling a range of related and complementary products/services. For example, leather and leather products manufacturing enterprises at Hazaribag of Dhaka is treated as the cluster of leather goods. Clusters are identified considering various factors such as-geographical area, product or service etc. Banks or NBFis extend credit facilities to CMSME customers under cluster financing backed by group collateral/guarantee.

Digital Platform for MSMEs' Working Capital: Supply Chain Finance (SCF)

Bangladesh's first digital factoring marketplace-TREDX began its journey in 31 July 2022 to leverage technology in delivering supply chain financing solutions to millions of SMEs. Bangladesh Bank issued guidelines for digital factoring in January 2022. Under the guidelines, the central bank would allow an entity to launch a digital platform for local factoring or receivable financing for a period of one year on a pilot basis.

The MSMEs suffer to get working capital finance as they receive payments against supply of goods from large corporate houses after a certain period of time. Sometimes arranging working capital becomes difficult for them until the payments against the supply are received. Now, the MSMEs which are supplying goods to the corporate would get finance from the banks and non-bank financial institutions against the invoices of the letters.

The proposed system would allow MSMEs to upload the documents of trade receivables on the digital platform. Then, a notification would be sent to the corporate house for the verification of the trade receivable documents. Upon verification of the corporates, the documents would be visible to the banks and NBFIs for bids to purchase the trade receivable. In the bidding, the banks, for instance, would bid against a trade receivable worth Tk 1 lakh that would be matured in three months. It any bank wins the bid at Tk 99,000, the bank would pay the amount to the supplier MSME within one day.

Afterwards, the winner bank or NBFI would receive the money against the trade receivable from the corporate house on maturity after three months. In case of failure, the recourse will be on the approving corporate.

During the trial phase, single investor or financier can invest maximum amount Tk. 5 crore to a single corporate buyer. A single investor or financier can invest up to Tk. 20 crore at any point of time and a single factoring transaction can be maximum Tk. 25 lakh. Besides, a single MSME seller can acquire Tk. one crore of investment at any point of time. The platform provider will have to provide a bank guarantee of Tk. 1 crore in favor of BB's payment system department general manager for the whole duration of the piloting phase in order to cover any unforeseen losses that may arise from the operation of the platform to its participants.

In this platform, the Government of a country can take part so that any suppliers who supply to the government may get access to the low-cost funds. The central bank now is thinking to start secondary market for facilitating factoring market place.

5. CMSME Access to Finance: Existing Scenario and Finance Gap

5.1 Need for Financial Resources for CMSMEs Growth and Development

Irrespective of the size, all firms, whether large or small, require financial resources for fulfilling business start-up needs, funding investment and to facilitate operation, expansion, and growth potential (Bottazzi, Secchi & Tamagni, 2014). According to the theory of Resource Based View, financial resources are the most noteworthy resources for growth and expansion of any firm. These resources include the ability of the firm to generate internal funds and the capacity to borrow from external sources, as well as other financing mechanisms that include cash balances, supplier credit, advance receipts, venture capital, leasing, factoring, and others. In order to foster economic growth and development, it is badly needed to ensure the profitability and growth of the small and medium enterprises sector and access to finance is the precondition (Abdulsaleh & Worthington, 2013).

Access to finance has some implications on the growth or performance of CMSMEs in different aspects. Some studies highlight that the availability of finance is the prime factor for the success and growth of MSMEs (Osei-Assibey, 2015; Rajamani et al., 2022). Khan (2022) identifies access to finance as the main barrier for growth of SMEs. Some studies conclude that financing constraints have negative influence on firm growth (Ayyagari et al., 2008; Du & Nguyen, 2021). Another study in Eastern Europe reveals the interesting findings that firms with access to formal financial institutions exhibit 9% higher employment growth and 36% higher sales growth (The World Bank, 2009). The inability of access to credit is the significant bottlenecks for CMSMEs and this financing problem hinders their normal business operations that result in the lack of potentiality for future growth. Hence, it can be concluded that financial resource is one of the major inputs for any business and undeniably for CMSMEs all over the world.

5.2 CMSMEs Lack Greater Access to Finance in the Formal Financial Sector

Although different theories and approaches describe the financial behavior of CMSME differently but the general agreement suggests that all over the world, small firms face constraints of financial resources and the internal and external financing has great implication on their growth and performance (Guariglia, 2008). Their access to formal credit is not easier compared to the large enterprises. Most of the CMSMEs in the world and specially in Bangladesh are family-based and lack proper financing for their start- up and upholding the operations as they mostly relied on their own capital. CMSMEs are generally financed by both from internal and external sources (Osei-Assibey, 2013; Muhumuza, 2019). Initially, they highly depend on their own sources like personal savings, existing capital and reserves or retained earnings and subsequently seek external sources like financial institutions, venture capital, Non-Government Organizations (NGOs), government loan or subsidies, grants from international development agencies and other funding sources (Mac an Bhaird, 201 0).

Considering the contribution of CMSMEs growth and job creation, governments of both developed and developing countries are trying to have their better access to finance. However, for CMSMEs, it is quite hard to

have better access to formal financial sources related to large firms (Blancher et al., 2019; Mulaga, 2013). CMSME all over the world face limited access to external sources which is the noteworthy constraint for their business operations and growth (Gichuki, Njeru & Tirimba, 2014; Osei-Assibey, 2015; Page & Soderbom, 2015). This higher obstacle to external financing can be treated as the sluggish growth for MSMEs. Therefore, the literature suggests that CMSMEs finance a tiny portion of their funding requirement from external sources.

Due to the size and small amount requirement, it is also very difficult for CMSMEs to have access to formal security or equity markets. As a result, small firms rely heavily on their own financial sources and subsequently on commercial banks and other formal financial institutions as being the main source. Bank finance is linked with faster CMSME growth, while informal finance is not. However, considering the perceived high risk and large monitoring and administrative cost involvement, most of the formal financial institutions do not find this segment as a good investment opportunity and even when they decide to invest, they impose higher fees and interest rates related to larger firms. Although this is true in most of the cases, recently, a few of them are coming forward with a good number of initiatives for serving MSMEs. However, these are not satisfactory to fulfill the greater demand of CMSMEs, especially in the rural areas where most of the clusters are concentrated, due to lack of adequate banking network and alternative delivery channels. Even if there are some channels, MSME have less power to negotiate with them. These consequences always constrain CMSMEs to have access to formal financial institutions and create dependency on informal financial sector which adversely affect their growth or performance.

5.3 Some Empirical Evidences of CMSME Access to Finance in Bangladesh

It is very general that financial constraints affect CMSME most adversely than large firms and therefore sound financial system of a country can relax these impediments which is highly beneficial for CMSMEs. In Bangladesh, the financial system characterizes as the bank-based system. It is therefore clear that financial inclusion would hardly ever been successful unless

banking sector participate strongly. However, access to finance into commercial banks is not yet satisfactory from the last two decade. Choudhury & Raihan (2000) studied on SME access to credit and found that, "the access to formal credit is not available at all to 50.53 percent of the stakeholders. Only 35.79 percent of SME stakeholders enjoy unrestricted access to the formal credit. The rest (13.68 percent) of them have restricted access to the formal credit". Subsequently, after a decade Mamun et al. (2013) conducted another survey among small enterprises and showed that about 60 percent of sampled enterprises got access into commercial banks and other financial institutions. Enterprises who got loan, only 46 percent of them got the full amount of their demand and other 54 percent firms got partial access.

Research conducted by Mamun et al. (2022) specially in the rural and suburban areas where interviewees were from both cluster and non-cluster CMSEs. They found that despite having borrowing need for 73 percent rural enterprises only 33.2 percent of them got access into banks. It may be due to the absence of banking network in those areas or easy access to loan from other sources like NBFIs, NGO-MFIs, money lenders, multi-purpose cooperatives, samities, and others. They also found that the average debt to equity ratio of the sampled CMSEs was 33.5 percent. From their study it is also evident that 86.6 percent sampled CMSEs obtained loans from sources other than the banks and out of them 66 percent obtained loan from NGO-MFIs, followed by money lenders, multipurpose cooperatives, NBFIs and samities. It is notably that the average cost of borrowing from those informal sources was 16.6 percent.

In another study Mamun et al. (2022) revealed that the average debt to equity ratio of the sampled CMSEs was 39 percent. Majority of the banks' loan (79 percent) used by the respondents were mainly for working capital requirement, while only 21 percent of the funds were used in the form of term loan. More than half of the respondents were not satisfied about the terms and conditions of banking products for CMSEs. However, 73.2 percent of them were willing to take loans in future from banks. A majority of the sampled firms (68 percent) opined that they were not pleased with

the current features (EMI, grace period, maturity and other terms and conditions) of banks' lending products. Therefore, they require unique products from banks based on their business characteristics.

Their study also focused on the supply side specially for banks. Based on the responses received from the sampled banks (31), the average products developed by the banks for CMSME sector was 7.22 which ranged from 0 to 18. Although around 62 percent of banks claimed that they have developed some cluster specific products based on the CMSEs' characteristics, the numbers of products are very few and the product features are hard to be differentiated from their existing product basket. The vast majority (90.8 percent) of the sampled banks reported that the documentation, amount of loan, interest rate, and other charges may differ, based on CMSE business characteristics. In terms of CMSE loan demand, 32.3 % banks stated that they get demand from the CMSEs where they do not have specific products to serve, while 58.1% banks have financing products for the start-up business and unbanked CMSEs. Around 91% banks said that the tailor-made products could be beneficial both for the CMSEs as well as the for banks. However, only 35.9 percent banks had different initiatives to identify the CMSEs' requirement for developing new products.

5.4 CMSME Finance Gap

Despite having huge potential, CMSME sector generally face severe financial constraints all over the world (Islam et al., 2014; Mamun, et al., 2022) including Bangladesh (Chowdhury, Azam, and Islam, 2013; Khatun, Amanullah & Khulna, 2021) as this sector has much limited access to formal institutions as a source of finance (Islam, Yousuf, and Rahman 2014). According to the estimate of World Bank, in developing countries 40 percent of formal MSMEs or about 65 million of firms have financing gap of $5.2 trillion every year, which is equal to 1.4 times of the worldwide MSME lending (World Bank, 2018). By region, Asia and the Pacific recorded the uppermost financing gap in the world, accounting for 57 per cent of the total financing gap, or US$ 2.7 trillion, underlining the vast unexploited potential of the region (ESCAP, 2021).

According to the International Finance Corporation (2017) estimation the microenterprise finance gap in developing countries was $718.8 billion, and the SME finance gap at $4.5 trillion in 2017. This unmet demand represents 8 I percent of the potential demand from microenterprises ($882 billion) and from SMEs it was 56 percent of the potential demand ($8. I trillion). This report also showed that the potential MSME demand was the highest in the East Asia and Pacific region with almost 58 percent of the total global potential demand.

In Bangladesh, it is estimated that there are 7.8 million registered MSMEs and a greater proportion of them is microenterprises (88 percent) while only 12 percent are SMEs (SME Finance Forum, 2018). Although around 50 percent of the total populations are women, the ownership of WMSME is only 5 percent among the enterprises. Singh et al. (2016) found that in 2014-15, a $0.77 billion financing gap existed for women-owned SMEs in Bangladesh. This amount corresponds to an unmet financing demand for 60.2 percent of women-owned SMEs. A recent study of Madan (2020) reported that the estimated demand for MSME finance in Bangladesh is US$ 57 billion. But unfortunately, only 33 percent (US$ 19 billion) of this demand is currently met resulting another 67 percent finance gap in the sector. The portion of SMEs in this gap was expressively higher at 93 percent or US$ 36 billion. The study also reported that the informal demand for finance was 52 percent of formal demand or US$ 29 billion. Microenterprises faces more of a gap with 86 percent (US$ 2.8 billion) unmet demand. On the other hand, within SMEs, although this is comparatively lower, but still high at 67 percent (US$ 36 billion). The women-owned small and medium enterprises gap is higher at US$ 2.4 billion (96 percent) and for male-owned SMEs it was similar with 95% facing a finance gap.

The large financing gap and the credit constraints may jeopardize the potential grow of CMSMEs in Bangladesh Although Financial institutions are coming forward to finance the sector, commercial banks credit to MSMEs steadily increased at a CAGR of 13 percent from 2010 to 2020 and

the MSME credit market remains small at 8% of GDP, and is concentrated on urban areas (around 80 percent) (ADB, 2021).

6. Alternative Financing Options

6.1 What is Alternative Financing?

Financial inclusion entails ensuring that businesses have access to useful and affordable financial products that suit their needs responsibly and sustainably. To accomplish these goals, banks and other financial institutions create a variety of products and financial mechanism for CMSMEs globally. Out of these, alternative financing solutions are now more widely used to ensure that CMSMEs have more access to financing. Therefore, alternative financing refers to financing that is accessible outside the conventional large banks. It provides entrepreneurs with a wider range of options and more flexibility when selecting financial services solutions. Alternative financing categorically refers to a class of financing solutions, such as debt and venture capital that fill in holes in traditional financial markets.

This development is a part of a larger push toward financial inclusion, in which more people have access to established banking infrastructure. How, for instance, can financial institutions assist those with spotty credit records more effectively? What about those who cannot obtain conventional mortgages? Or businesses that are not eligible for conventional bank loans? According to Morgan Stanley, the emergence of alternative financing structures is a result of a market opportunity for private investors. This development is a part of a larger drive toward financial inclusion, in which more people have access to established banking infrastructure. How, for instance, can financial institutions assist those with inexact credit records more effectively? What about those who don’t meet the requirements for conventional mortgages? Or businesses that are not eligible for conventional bank loans? According to Morgan Stanley, the emergence of alternative financing structures is a result of a market opportunity for private investors.

6.2 Alternative Financing Products and Approaches

6.2.1 Factoring

A company might use factoring to obtain quick financing or cash based on the expected future income associated with a specific amount owed on an account receivable or a business invoice. Accounts receivable are sums of money that customers owe the business for purchases they made on credit. A factor is a mediator, similar to a bank, which buys companies' receivables in order to give those cash or capital. In essence, a factor is a source of finance that consents to pay the business the amount of an invoice less a discount for commission and other costs. Therefore, by selling its accounts receivable at a discount to a specialized institution (bank or FI), CMSME can obtain funding through factoring. By selling their receivables in exchange for a cash infusion from the factoring provider, CMSMEs can better meet their short-term cash needs through factoring. With volumes substantially increasing over the last ten years, particularly in emerging nations, factoring has gained popularity and acceptance as a viable alternative for CMSMEs struggling with cash flow.

6.2.2 Purchase Order Finance

Purchase order financing, commonly referred to as ‘PO Finance’, offers money to companies that have purchase orders so they may pay their suppliers and manage their cash flow. A purchase order is a document that a buyer sends to a seller as an order. It constitutes an agreement between the buyer and the seller regarding the costs and amounts of a good or service once it has been acknowledged by the seller. Even if it's a good sign for a company, there are two main reasons why it could produce problems with cash flow. First off, the company needs a sizable sum of money to pay its suppliers for producing the goods for the order. This payment is typically necessary before suppliers can begin producing the goods. Second, the final consumer typically gets extended payment terms for the item they are receiving, in some situations it can take up to 120 days. To complete this order, the company needs to have a sizable amount of cash on hand to cover production costs until the buyer pays. Therefore, purchase order financing

is a viable and well-liked choice for companies looking for a quick and efficient solution to finance their purchase orders. Due to the strength of the purchase order, a firm secures financing for inputs to fulfill the order in exchange for agreed-upon fees and service costs.

6.2.3 Warehouse Receipt Finance

A financial institution lends money to a business, manufacturer, or process or as part of warehouse finance, a type of inventory financing. Existing items, commodities, or inventories are moved to a warehouse and utilized as security for the loan. Smaller privately-owned companies that lack access to alternative choices, especially those in the commodities-related enterprises, are most likely to use warehouse finance. The quantity and quality of a specific commodity being stored in a recognized facility are guaranteed by a warehouse receipt, a sort of documentation. Warehouse receipts are crucial because they show that the product is at the warehouse and that all required paperwork has been verified.
In warehouse receipt finance, the goods stored at a licensed warehouse ser ve as collateral for the loan, which must be repaid before the commodities may be released.

6.2.4 Leasing

In leasing, a business acquires the right to utilize machinery and equipment for a predetermined timeframe in exchange for a rental price. A healthy leasing market is a crucial source of funding for the development of the nation's CMSMEs. The absence of assets that can be used as collateral for bank loans places unique restrictions on these businesses. Numerous CMSMEs in our country raise money from informal sources, which is too expensive for investment funding. For CMSMEs, leasing has several benefits over other types of financing, such as reduced down payments, credit availability, easier security and paperwork requirements, quicker loan approval, tax benefits, etc. Leasing helps to promote small businesses in developing nations, this helps to fight poverty by creating jobs and revenue. Furthermore, by introducing CMSMEs to established financial markets and creating demand from leasing businesses for capital market funding, a

strong leasing industry has the ability to help to the growth of capital markets. For their expansion, CMSMEs need better access to financing, particularly for the purchase of capital equipment and the implementation of new technologies in operations. However, CMSMEs typically lack sufficient capitalization, trustworthy and audited credit records, and extra assets for security, which restricts their access to financing. As a result, the lessor now has the chance to seize the market for its potential products and services. Furthermore, leasing can be a way for CMSMEs to get short- to medium-term funding for the equipment they need to grow their business.

6.2.5 Securitization

Securitization is the process of combining different types of debt, such as credit card debt, auto loans, residential mortgages, and commercial mortgages, into a single pooled financial instrument. This collection of bundled assets is then sold to investors by the bank. Through securitization, a bank pools CMSME loans into a portfolio and sells that portfolio to investors in the capital markets, lowering its risk and boosting liquidity. Based on the companies' credit ratings, the receivables (trade credit) are bundled as securitized assets and function as commercial paper. This will enable CMSMEs in lowering their working capital expenditure. Factoring and letter of credit processes are quite similar to securitization, although securitization is more cost-effective. This will enable CMSMEs to invest less in operating capital. Although more cost-effective, securitization is very similar to the letter of credit and factoring processes. A mortgage-backed security (MBS), a class of asset-backed security that is secured by a number of mortgages, is a common example of securitization.

SMEs in OECD nations and emerging economies frequently employ asset-based financing to meet their working capital needs, facilitate local and international trade, and, in some cases, for investment objectives. Particularly in Europe, the frequency of these instruments for SMEs is comparable to that of traditional bank lending. Moreover, despite supply-side effects of the global financial crisis, asset-based finance has increased significantly over the past ten years.

6.2.6 Crowdfunding

In crowdfunding, a business solicits financial support from several people in a manner similar to social marketing (usually by using the Internet to solicit gifts, equity, or debt). It is an innovative means of raising money for various new ventures, allowing the founders of for-profit cultural or social projects to ask for investment from a large number of people, frequently in exchange for future products or equity. Crowd funding is a method of obtaining outside funding from a big audience as opposed to a limited number of specialist investors (such as banks, business angels, or venture capitalists), where each person contributes a small portion of the funding needed. This sort of funding can help CMSMEs overcome the challenges including information asymmetry and a lack of collateral.

Fundraisers can use online platforms to gather money from a sizable audience. Startups and expanding enterprises most frequently use crowdfunding as a means of obtaining alternative capital. It is a creative method of obtaining finance for new endeavors, enterprises, or concepts. Creating a community around your offering can also be accomplished in this way. One can access new customers and acquire helpful industry information by leveraging the power of the internet community. Entrepreneurs, businesspeople, and organizations—particularly small and medium-sized businesses—are the target audience for this investment. If the fundraising campaign is successful, crowdfunding platforms typically charge fundraisers a fee. Platforms for crowdfunding are anticipated to offer a safe and simple service in exchange. A funding strategy that is all-or-nothing is used by many platforms. This implies that if you meet your goal, you will receive the money, and if not, everyone will receive their money back with no repercussions or financial loss.

Importance of Crowd-funding for CMSMEs' Financing

- Because the entrepreneur and investor communicate directly over the internet, there is no need for a funding intermediary like a bank.
- Crowdfunding is a crucial tool for disseminating information to a big audience in addition to being a means of raising money.

- Crowd-funding raises project awareness.
- Crowd-funding aids in gaining recognition, which could aid in future commercialization.

Types of Crowd-funding

The many types of crowdsourcing are described below.

Peer-to-peer Lending: A group of people loans money to a business on the condition that they will be paid back with interest. It is fairly comparable to regular bank borrowing, with the exception that you borrow from several investors instead.

Equity Crowdfunding: Sale of a portion of a company to several investors in exchange for capital. The concept is comparable to the purchase or sale of common stock on a stock exchange or to a venture capitalist.

Rewards-based Crowdfunding: A non-financial reward, such as goods or services, is typically expected in compensation for a person's contribution when they donate to a cause or business.

Donation-based Crowdfunding: People make small donations to help a specific charitable project reach its bigger financing goal while receiving no in return.

Profit-sharing/ Revenue-sharing: Sharing future profits or revenues with the public in exchange for immediate finance is a possibility for businesses.

Debt-securities Crowdfunding: Crowdfunding for debt securities involves people buying a bond or other financial product that the business has issued.

Hybrid Models: Give businesses the chance to blend components of various types of crowdsourcing.

6.2.7 Risk-sharing Facilities (RSFs)

The majority of nations have created risk-sharing facilities (RSFs) to help commercial banks de-risk their lending decisions and partially cover the risks associated with lending to CMSMEs. By taking on a share of the lender's losses on loans made to CMSMEs through the payment of a fee, an

RSF reduces the risk of third-party credit risk for the lenders. By sharing risks with financial intermediaries and supporting the growth of suitable market segment lending and risk management technologies, a well-functioning RSF may support CMSME funding in a way that is market-friendly. Additionally, it can aid in easing CMSMEs' collateral restrictions. A RSF may also be difficult to design and implement, as well as vulnerable to moral hazard if it operates in a setting with poor governance. With regards to execution, there are numerous design alternatives. These consist of the guarantee features, operating procedures, and management structure. Weak governance can lead to resource misallocation and market distortions, much like other state interventionist tools.

6.2.8 Market Place (peer-to-peer) Lending

A full stack disruptor, this affects the entire lending value chain. Through online marketplaces that pair lenders (savers, investors) with borrowers, it offers credit to CMSMEs (and individuals). These loans have a number of benefits, including quick processing times, ease of use, and no requirement for collateral. If the low cost of the structures is passed due to their technological foundation, they may also lead to lower interest rates. As a result, there is substantially less demand for physical infrastructure and personnel. Additionally, the cost of the regulatory environment is far lower in terms of capital adequacy, reserve needs, and other factors.

There are currently marketplace loans for MSMEs in 60–80 countries, according to estimates. African countries including Kenya, Ghana, Tanzania, and Zambia are seeing an increase in market lending. SME's are now using the P2P lending or market-place lending platform to meet their needs for short-term loans with reduced interest rates. Fintech firms facilitate this peer-to-peer lending. By providing loans themselves and linking SMEs to banks and financial institutions, fintech companies are enhancing SMEs' access to capital.

6.2.9 Revenue-based Financing

With revenue-based financing, businesses can raise capital by promising a portion of continuous future revenues in return for the capital. Up until a

specific multiple of the initial investment has been repaid, investors will get a piece of revenues at a pre-determined percentage. Cash advances are made against recurring monthly or yearly revenue (MRR or ARR) under a type of business credit known as revenue finance. Founders can use revenue finance to get cash up front, cut the expense of handling cash, and put money towards expansion plans. Software as a Service (SaaS), e-commerce, and subscription-based businesses often respond well to this kind of financing.

6.2.10 Mezzanine Finance

Mezzanine finance is essentially a form of debt capital with the ability for the lender to convert to ownership or equity interest in the firm in the event that the loan is not repaid on schedule and in full. It typically has a lower priority than financing provided by senior lenders like banks and venture capital firms. Mezzanine finance may be a source of funding, but because they lack the necessary negotiation expertise for complex deals, banks and parent companies should step up to support SMEs and be well-qualified with sufficient legal protections. Several financing instruments are combined and sold as a single unit to an investor by a mezzanine finance business.

6.2.11 Venture Capital

A venture capital operation includes affluent individuals investing equity in businesses that are thought to have great promise. Since the investor takes on a lot of risk, investment projects typically have relatively high internal rates of return (between 20 and 25 percent). In addition to financing the businesses, VC firms also offer support in these areas. They work to make the SME profitable since they own a portion of it and will benefit from their share of the profits. As it provides the cash needed by the risky investee firm and enjoys ownership rather than being a creditor in exchange, VC firms create a win-win situation for both the investee firm and the VC firm. Due to VC firms' participation in profits, investee companies are not affected by bank financing's tight installment payment schedule. Additionally, they will sell the ownership in accordance with the contract, either to the investee company or to a third party, so as not to place the investee company under undue strain.

6.2.12 Business Angels

An alternative to venture financing is business angels. They often include a wealthy individual who, in exchange for company shares, invests equity capital in start-up businesses (without any family link). A private individual, frequently with a high net worth and typically with business experience, is referred to as a business angel when they directly invest a portion of their assets in start-up and expanding private companies. Business angels can make individual investments or participate in syndicates, where one angel often assumes the leadership position. In addition to funding, angel investors offer the entrepreneur contacts, company management expertise, and talents. Angel investors with experience are aware that a return on their investment could take some time. As a result, they may serve as a reliable supply of 'smart and patient' financing. Angel investors in business are crucial to the economy. After family and friends, they are frequently the second-largest source of outside capital for newly founded businesses in many nations.

6.2.13 Finance from Grant

A grant is an award, normally monetary, bestowed by one entity (often a business, foundation, or government) on a person or organization in order to help them achieve a goal or reward good work. In most cases, grants are essentially gifting that don't need to be repaid. The majority of business owners employ a variety of strategies to raise money for their small enterprises, including personal savings. There are two basic types of outside funding sources: Debt finance, which is money that must be repaid, typically with interest, and equity financing, which is money given in exchange for a portion of ownership and potential future earnings. Grants and subsidies, on the other hand, are financial aid that is not required to be paid back and may be provided by governmental bodies, charitable institutions, or for-profit businesses.

6.2.14 Small Finance Banks (SFBs)

Small business units, small and marginal farmers, micro and small industries, and unorganized sector organizations are just a few examples of

the unserved and underserved groups that the small finance bank will primarily assist by accepting deposits and providing loans to. By providing basic banking services, this bank's primary goal is to ensure financial inclusion.

6.2.15 Capital Market

All major countries obstacle for SMEs to overcome is access to financing, and practically all major countries' capital markets have recognized the necessity for a separate exchange for the SME segment. Due to strict processes and minimum paid-up capital requirements, the majority of SMEs are often not even eligible to file for listing on Bangladesh's exchange marketplaces. On September 30, 2021, trading on the SME board of the Dhaka Stock Exchange (DSE) began in Bangladesh. On that day, there was only Tk 2520 worth of transaction on the board. Nine small cap companies are currently listed on the SME board of the top exchange. These businesses include: Krishibid Feed, Nialco Alloys, Mamun Agro Products, Mostafa Metal Industries, Apex Weaving and Finishing Mills, Oryza Agro Industries, Master feed Agrotec, Wonderland Toys, and Bengal Biscuits. Achia Sea Foods and Star Adhesive's qualified investor offers (QIO) have just been authorized by the Bangladesh Securities and Exchange Commission (BSEC), and these two businesses are now awaiting listing with the SME board.

Two specific SME exchanges were launched in India in 2012 in response to the prime minister's Task Force's suggestions. In 2001, the SME Board was established in the Philippines under the Philippine Stock Exchange. While there isn't a specific SME Exchange in Malaysia or Thailand, there are markets that SMEs can access. The Hanoi Stock Exchange in Vietnam provides a trading venue called UPCoM that was created in 2009 and has no listing fees for unlisted public businesses. Although there is no SME capital market in Indonesia, SMEs are given preferential access to the Indonesia Stock Exchange market.

6.3 Some Key Considerations for Developing Alternative Financing Options

- Clear and comprehensive regulations covering all kinds of access to credit available to CMSEs
- Establishing sound, thorough, enforceable, and fair legislative framework
- Market conduct/client protection
- A vital component of credit granting is an effective and comprehensive credit information system
- One of the main causes of the limited utilization of some of the available alternative mechanisms is the level of awareness.
- Guaranteeing data protection and privacy rights through proper legislative frameworks would help to limit the hazards brought on by the rising digitalization of CMSEs.
- Coordination with other ministries and regulatory agencies.
- Authorities should make sure grants (from governments and other sources) are administered in a way that benefits the target market
- The capital market is developed in a way that is CMSE-friendly.

7. Recommendations and Conclusion

One, Factoring, leasing, warehouse receipt finance and purchase order finance are some of the important products for the CMSE sector. In Bangladesh we use these products in a very limited scale. We may use such products extensively. In this regard, to minimize the risk of future payment, there could be a strong data base of the businesses including their trading history and past payment behavior so that lenders have interest to use these products.

Two, Securitization is more popular financing mechanism in most of the developed countries. In Bangladesh we lack diversified funding markets and only the largest firms are able to directly access in the capital markets, therefore, credit supply to CMSMEs is heavily depend on bank lending. In this backdrop, developing CMSME securitization as the alternative funding sources would ensure lending to viable smaller firms. Through securitization, a bank may pool CMSME loans into a portfolio and then sells

that portfolio to various investors in the capital markets which will lower its risk and will boost the liquidity. Bank may use securitization like a commercial paper through bundling the receivables as securitized assets. To address the potential risk and challenges, a well-functioning CMSME securitization market would be required. To facilitate this market, a wide-ranging, multi-faceted strategy is essential which includes regulatory initiatives and infrastructure development.

Three, In many countries crowdfunding become popular as a funding sources for individual as well as for CMSMEs. In Bangladesh this product can be popularized for the benefits of CMSME sector. To ensure a smooth crowed-funding market, a well-organized platform may set up by any private or government agency to raise funds on behalf of the CMSME sector so that investor may avoid the potential risk of direct lending. However, entrepreneurs may contract directly to the fund providers through online platform specially for donation based crowed-funding. To make it more popular, CMSME stakeholders may create mas-awareness programs all over the country.

Four, Since CMSME sector is heterogenous in nature and characterize as vulnerable sector, the riskiness of this sector is comparatively higher. In these scenario credit guarantee scheme may be the good alternative for financing extensively in the sector. In this regard, Bangladesh Bank already started a credit guarantee scheme for CMSMEs including the women entrepreneurs. However, this is not sufficient compare to the larger demand of funds. Therefore, more Risk-sharing Facilities (RSFs) like credit guarantee schemes can be extended by government or any other stakeholders. Moreover, commercial banks may come forward with credit insurance facilities in a greater scale.

Five, Peer to peer lending, revenue-based financing and Risk-sharing Facilities (RSFs) can be the better alternative financing sources for CMSEs in Bangladesh. Many African countries including Kenya, Ghana, Tanzania, and Zambia are seeing an increase in market lending. Similarly, in Bangladesh we may use such P2P lending or market-place lending platform to meet their needs for short-term loans with reduced interest rates. In this

regard, Fintech firms may facilitate this peer-to-peer lending. By providing loans themselves and linking CMSMEs to banks and financial institutions, fintech companies can enhance CMSMEs' access to capital. With revenue-based financing, businesses may raise capital by promising a portion of continuous future revenues in return for the capital. Software as a Service (SaaS), e-commerce, and subscription-based businesses may respond well to this kind of financing.

On the other hand, RSFs may assist commercial banks de-risk their lending decisions by covering a portion of the risks associated with lending to CMSMEs. The Credit Guarantee Scheme against Financing of CMSME customers has already been introduced by Bangladesh Bank. The bank can start a program with a CMSME focus that incorporates lessons learned from previous initiatives, particularly by addressing governance issues. To support new and innovative businesses, a variety of pre-bank financing sources can be explored.

Six, Although venture capital and business angels are largely use in international market, we are lagging behind using such approaches in Bangladesh. In order to expedite such approaches in our country, government has put forward policies that encourage the growth of the country's startup ecosystem. There are few venture capital firms working for the start-up businesses. For the greater development of new businesses or even the existing businesses who lac capital and managerial capacity, may be benefited form introducing more venture capitalists including public and private initiatives in Bangladesh. In this regard, wealthy individuals, insurance companies, pension funds, foundations, and corporate pension funds may pool money in a fund to be controlled by a venture capital firm.

Seven, For CMSME sector development, grant and subsidies are highly desirable. In this context, Bangladesh Bank may create a funds from the CSR funds as well as the funds received from the dormant accounts of all commercial banks. Government may attract more international donor agencies for availing such grant to be provided for the CMSME sector.

Eight, At present, banking market structure is not sufficient to fulfill CMSE financing need all over the country. Even, commercial banks along with

other financial institutions and informal lending sector including NGO-MFIs, cannot accomplish the goal of CMSE financing demand. Hence, to ensure the financial inclusion, Government may think to set-up a 'Small Finance Bank' as a specialized CMSE banking network for extending larger banking services for the sector. Alternatively, Bangladesh Bank may categories some banks mostly to work for the CMSE segment all over the country.

Nine, although we have SME board in our capital market, the presence of listed SMEs is very low. SME capital markets should be well designed to mitigate risks arising from the external environment, which requires a sophisticated institutional mechanism supporting SMEs in direct finance as well as managing any possible risks. Hence, a wide-ranging policy framework for SME access to capital markets is required including policy measures for developing investor base and promoting market literacy. Furthermore, a strong and effective coordination is needed among stakeholders like policy makers, regulators, securities firms, market organizers, investors and SMEs. In order to increase the confidence of the investors SMEs should comply the standard requirements including limited liability company, asset valuation, standard books of accounts, tax filing, reporting and disclosure issues.

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Paper Four

Adoption of Cloud Computing in Banks: Opportunities and Challenges

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List of Abbreviations

AI	Artificial Intelligence
API	Application Programming Interface
AWS	Amazon Web Service
BB	Bangladesh Bank
BCBS	Basel Committee on Banking Supervision
BIBM	Bangladesh Institute of Bank Management
BPaaS	Business Processes as a Service
CBA	Commonwealth Bank of Australia
CBSs	Core Banking Solutions
CC	Cloud Computing
C-DAC	Centre for Development of Advance Computing
CIB	Commercial International Bank
CIO	Chief Information Officer
CRM	Customer Relationship Management
CSP	Cloud Service Provider
CTO	Chief Technology Officer
DR	Disaster Recovery
EC2	Elastic Compute Cloud
e-KYC	Electronic Know Your Customer
ERP	Enterprise Resource Planning
FCB	Foreign Commercial Bank
FGD	Focused Group Discussion
FI	Financial Institution
FSB	Financial Stability Board
GDPR	General Data Protection Regulation
HoIT	Head of IT
IaaS	Infrastructure as a Service

ICT	Information and Communication Technology
IDRBT	Institute for Development and Research in Banking Technology
IP	Internet Protocol
IT	Information Technology
ITD	Information Technology Department
MFS	Mobile Financial Service
NDC	National Data Center
NIST	National Institute of Standards and Technology
P2P	Person to Person
PaaS	Platform as a Service
PCB	Private Commercial Bank
RRB	Regional Rural Bank
SaaS	Software as a Service
SDB	Specialized Bank
SLA	Service Level Agreement
SME	Small and Medium Enterprise
SOCB	State Owned Commercial Bank
UCB	Urban Co-operative Banks, United Commercial Bank
XaaS	Anything as a Service

Executive Summary

Compared to today, banks will undergo tremendous transformation in the future. Banks must take deliberate steps to get ready for the future by adapting the changing consumer expectations, new technology, and new business models. Cloud computing is a key area of interest for CIOs, C-suite executives, and board members. The popularity of cloud computing is growing as a result of its flexibility and efficiency. In order to determine how this technology can help them, certain sizable institutions are actively evaluating it. Before completely embracing technology, some bankers are being cautious because they want adequate responses to their security and regulatory issues.

Organizations, particularly banks, are under enormous pressure to quickly integrate novel components into their current business models in the fiercely competitive business environment of today. In the banking industry, cloud computing is used by two types of users: banks themselves, who incorporate and benefit from cloud services in their current business models, and customers, who use the cloud-based applications offered by banks to carry out their daily financial transactions. Through the use of cloud computing, banks can establish a flexible and responsive banking environment that can promptly adapt to new business requirements. Additionally, cloud technology provides secure deployment options that can aid in the creation of new customer experiences, encourage effective collaboration, improve market accessibility, and enhance IT efficiency. This facilitates the ability of employees to focus more precisely on the bank's mission and vision.

Cloud computing can be defined as more than just a technology; it represents a fundamentally different approach to computing that has the potential to reshape organizations' products, services, and processes. The cloud computing model offers access to a distributed and easily accessible pool of shared computing resources, including networks, servers, storage, applications, and services. These resources can be rapidly provisioned and released as needed, allowing organizations to adjust their workload dynamically with minimal disruption to operations. Clients typically access these resources through a pay-per-use model, while the service provider commits to delivering certain safeguards as outlined in a Service Level Agreement (SLA).

The study shows that 24 percent of the CTOs/HoITs/CIOs has a very good level of understanding regarding cloud computing. Almost same level of knowledge is seen in case of IT teams of banks. HoITs and the IT teams are the key implementers of cloud technology in banks, so they must have an excellent understanding of the technology. Otherwise, it will bring negative results for the organization. Board Members and Top-Level Management are the ultimate policy and decision maker. So, they need a clear understanding of the technology. It is also seen from figures that Top-Level Management and Board Members have a moderate level of understanding regarding cloud computing.

The survey found that the average number of IT employees attending meetings and vendor-organized cloud computing programs was 2.9 and 2.8, respectively. On the other hand, on an average 0.6 IT employees attended different international programs. Before implementing new technologies, acquiring knowledge from national and international sources is essential. However, IT employees need to catch up in attending various programs in the local and international domains.

The study also reveals that 51.9 percent of banks agree that cloud technology is relevant for them but not a strategic priority. On the other hand, only 11 percent of banks set cloud technology as critical in their top five strategic plan. About 33.3 percent of banks have given importance, but it is not in the top-five strategic priorities. Around 3.7% banks are not sure about the relevance of cloud computing in banks.

It is found that 48 percent of banks adopted some sort of cloud services. The respondent banks that adopted cloud services in hybrid and public clouds. It is seen that 47 and 41 percent of banks used hybrid and public clouds, respectively. However, banks use different cloud service models like SaaS, PaaS and IaaS offered by cloud service providers. The survey shows that approximately 68.8 percent of banks use SaaS and 31.3 percent use the PaaS model. Very few banks use IaaS and BPaaS as cloud service models.

However, it is seen that 48 percent banks have adopted cloud services partially, rest of the 52 percent banks are planning to move into cloud services by the next two years. Approximately 70 percent of those banks (52% of total) that do not have cloud services are willing to adopt it within the next two years. Table-3 shows that about 62 percent of banks are willing to get IT support services, followed by office automation (38%), human resource management (38%) and CRM (38%). Twenty-four percent of banks

expect to adopt call center facilities and 19 percent show eagerness to adopt various application software from cloud service.

Cloud adoption strategy may vary from bank to bank due to the size, human resources, capital base and technological capacity. Based on the opinions by the expert IT executives from banks, the research team suggests the following roadmap that may be followed by the banks in three different phases. Phase-1: Low dependency/Non-Critical Services (Email, Storage, CCTV recording, Data Analytics, CRM, Help Desk Management, Incident Management, etc.). Phase-2: Critical Services (HRMS, Remittance Management, In-House Developed Applications). Phase-3: Most Critical/Advanced Services (CBS including Database, Card System, I-Banking, MFS, Foreign Exchange Transaction Monitoring etc.).

Adoption of Cloud Computing in Banks: Opportunities and Challenges

1.0 Introduction

Banks are using Information Technology (IT) for efficiently serving customers and maintaining seamless banking operations. The importance of IT in the banking sector is widely recognized by industry experts and regulatory bodies. For instance, the Financial Stability Board (FSB) acknowledges the crucial role of technology in the financial industry and regularly monitors its impact on financial stability and risk management. Additionally, regulatory frameworks such as the Basel Committee on Banking Supervision (BCBS) provide guidelines and standards for the effective use of IT systems and cybersecurity practices in banks. However, most banks depend on third-party service providers to avail IT-based services. Outsourcing of IT services is very common in the banking sector. The growth of business and new channels is making the banking job complex. To solve the complex and changing working environment IT is a must. Dependence on new technologies like Artificial Intelligence (AI), Blockchain, Application Programming Interface (API), and Cloud Computing (CC) is increasing every day.

The banks of the future will undergo significant transformations compared to the present. In response to evolving consumer expectations, emerging technologies, and alternative business models, banks must initiate strategic measures to prepare themselves for the future. Cloud computing is emerging as a central focus for chief information officers, executives in the C-suite, and board members. Aggarwal (2022) from 'The Asian Banker' stated that recognizing the agility and cost-effectiveness offered by cloud computing, certain large banks such as Deutsche Bank of Germany, Standard Bank of South Africa, JP Morgan Chase of the USA, Standard Chartered Bank of the UK, and so on are taking proactive steps to test this technology. In India, ICICI Bank, Axis Bank, and Kotak Mahindra Bank are some of the first users of cloud computing in their banking services

(Schou-Zibell and Husar, 2023). However, other bankers are exercising caution as they await satisfactory responses to security and regulatory concerns

Ghule et al. (2014) stated that Cloud Computing (CC) refers to the provision of computing services via the internet, encompassing software applications, storage of data, and processing power. Instead of investing in and managing their own advanced computing infrastructure, banks can utilize cloud computing solutions to supplement or replace their existing data centers. This enables organizations to steer clear of the expenses and intricacies associated with maintaining modern IT infrastructures.

Organizations, particularly banks, are under enormous pressure to quickly integrate novel tech-components (e.g. but not limited to: digital payment systems, Person to Person (p2p) payments, Cloud Computing (CC), blockchain technology, Customer Relationship Management systems (CRM), Artificial Intelligence (AI) applications, etc.) into their current business models in the fiercely competitive business environment of today (Shevlin, 2022). In the banking industry, cloud computing is used by two types of users: banks themselves, who incorporate and benefit from cloud services in their current business models, and customers, who use the cloud-based applications offered by banks to carry out their daily financial transactions. Through the use of cloud computing, banks can establish a flexible and responsive banking environment that can promptly adapt to new business requirements. Additionally, cloud technology provides secure deployment options that can aid in the creation of new customer experiences, encourage effective collaboration, improve market accessibility, and enhance IT efficiency. This facilitates the ability of employees to focus more precisely on the bank's mission and vision.

Cloud computing is not a new concept for large size global organization. However, Bangladesh is far away from cloud computing adoption (Schou-Zibell and Husar, 2023). Banking sector is sensitive to adopt new technology. A very clear direction is required from the Central Bank and Government to move into cloud adoption. In the above context, cloud computing is a potential sector for industries specially for banking sector.

Cloud service needs to be analyzed, assessed and evaluated for identifying its opportunities, scopes and challenges. It is therefore a good opportunity to study how an innovation is perceived and what factors can encourage and prevent its early adoption. With the above background, BIBM has prepared this roundtable discussion paper with the following objectives.

1.1 Objectives

The broad objective of this roundtable discussion paper is to identify the opportunities and challenges of cloud computing adoption in banks. The specific objectives of the paper are to-

a. discuss the conceptual aspects of cloud computing;
b. depict the global scenario of cloud computing adoption in the banking sector;
c. identify the perceptions about cloud services among the IT professionals working in Bangladeshi banks and
d. find out the opportunities and challenges regarding the adoption of cloud computing in banks

1.2 Methodology

This is an exploratory study. The study uses both primary and secondary data. Primary data were collected through semi-structured questionnaire, and Focus Group Discussion (FGD). In this regard, a semi-structured questionnaire (Appendix-1) was sent to the IT department of all banks in Bangladesh. We received 36 questionnaires from banks (Appendix-2). Among the respondent banks, there were 4 State-owned Commercial Banks (SOCBs), 27 Private Commercial Banks (PCBs), 3 Foreign Commercial Banks (FCBs) and 2 Specialized Banks (SBs). Additionally, FGD was conducted among IT professionals of banks (Appendix-3). The secondary data were collected from various research papers, publications, and websites. Extensive literatures were reviewed for developing the conceptual aspects.

1.3 Organization of the Paper

The paper is organized into six sections. The first section describes the introduction, objectives, methodology and the organization of the paper. Section two discusses the conceptual issues on Cloud Computing; section three reviews the literature; section four shares global Cloud Computing Adoption scenario in the financial system; section five, shows the current status, cloud adoption factors, opportunities and challenges of Cloud Computing in the banking and financial sector of Bangladesh, and section six concludes with challenges, recommendations and conclusion.

2.0 Cloud Computing: Conceptual Aspects

A Gartner report listing cloud computing at the top of its strategic technology areas further reaffirmed its prominence as an industry trend by announcing its formal definition as:

"...a style of computing in which scalable and elastic IT-enabled capabilities are delivered as a service to external customers using Internet technologies."

This is a slight revision of Gartner's original definition from 2008, in which "massively scalable" was used instead of "scalable and elastic." This acknowledges the importance of scalability in relation to the ability to scale vertically and not just to enormous proportions.

Forrester Research provided its own definition of cloud computing as:

"...a standardized IT capability (services, software, or infrastructure) delivered via Internet technologies in a pay-per-use, self-service way."

The definition that received industry-wide acceptance was composed by the National Institute of Standards and Technology (NIST). NIST published its original definition back in 2009, followed by a revised version after further review and industry input that was published in September of 2011:

"Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or

service provider interaction. This cloud model is composed of five essential characteristics, three service models, and four deployment models."

Cloud computing can be defined as more than just a technology; it represents a fundamentally different approach to computing that has the potential to reshape organizations' products, services, and processes. The cloud computing model offers access to a distributed and easily accessible pool of shared computing resources, including networks, servers, storage, applications, and services. These resources can be rapidly provisioned and released as needed, allowing organizations to adjust their workload dynamically with minimal disruption to operations. Clients typically access these resources through a pay-per-use model, while the service provider commits to delivering certain safeguards as outlined in a Service Level Agreement (SLA).

2.1 Features of Cloud Computing

Cloud computing possesses unique characteristics that distinguish it from other forms of computing, as highlighted by Mahdavisharif et al. (2021). Two essential properties of cloud computing are identified, and several common features are outlined below:

Accessibility of a broad network: Cloud services can be accessed through standardized procedures, enabling users to connect via various platforms and applications. Whether using laptops, mobile phones, or personal computers, users can access cloud resources anytime, anywhere, as long as there is IP network connectivity.

On-demand self-service: This fundamental feature allows users to obtain computing services, including network storage and server time, as per their requirements. Cloud computing services can be provisioned instantly based on user requests, even without human intervention.

Other key features include:

Rapid elasticity: Cloud computing offers elastic and scalable computing capabilities, enabling seamless scaling out and scaling in as needed. Service

capacities can be dynamically adjusted to meet fluctuations in demand, allowing for cost optimization and meeting service quality expectations.

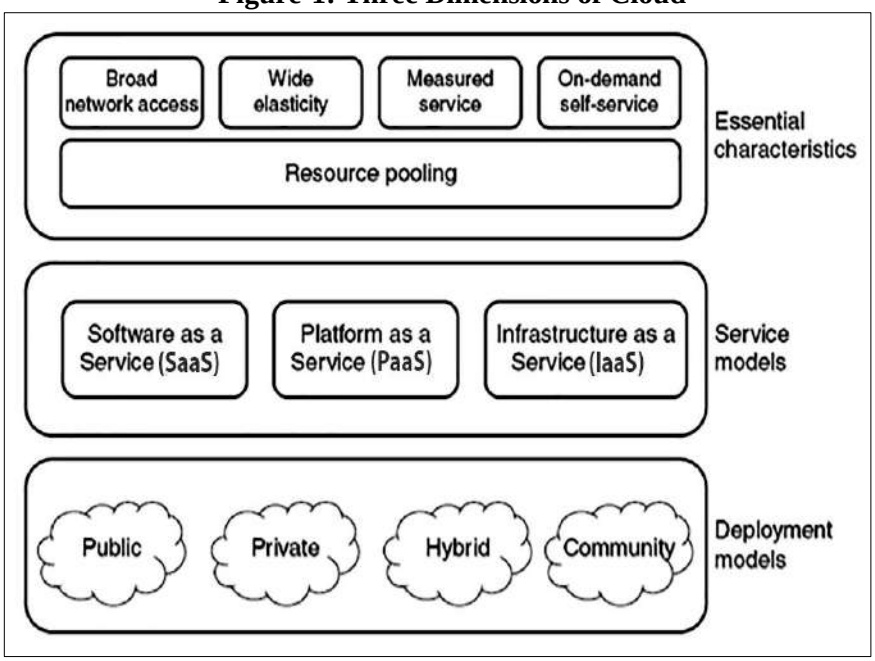
Pooling of resources: Cloud resource providers consolidate computing services from diverse physical and virtual resources to meet the computing needs of multiple users. This resource pooling approach allows for efficient utilization of storage servers and devices. Cloud providers select the most suitable resources from the pool to optimize service quality, enabling cost savings through resource sharing.

Service measurement: Cloud services provide automated monitoring, optimization, and reporting functionalities to ensure efficient resource utilization. Service measurement tools track and manage the utilization of cloud resources, facilitating informed decision-making and resource allocation.

In summary, cloud computing exhibits unique characteristics that enable broad network accessibility, on-demand self-service, rapid elasticity, pooling of resources, and effective service measurement and management.

The Following figure shows three dimensions of cloud computing:

Figure-1: Three Dimensions of Cloud



Source: Nicoletti (2013)

2.2 How does Cloud Computing Work?

Cloud computing is made possible through the utilization of virtualization technology. Virtualization enables the creation of simulated digital "virtual" computers that mimic the behavior of physical computers with their own dedicated hardware. These virtual computers, known as virtual machines, are effectively isolated from one another when implemented correctly. They operate independently, without interacting or sharing files and applications, even if they reside on the same physical machine.

One of the key benefits of virtual machines is their ability to optimize hardware usage. By running multiple virtual machines simultaneously, a single server can effectively function as multiple servers. This scalability allows data centers to serve numerous organizations, transforming into a network of data centers within a single infrastructure. This efficiency enables cloud providers to accommodate a larger number of customers at a lower cost.

Cloud servers are designed to maintain high availability, even if individual servers experience downtime. Cloud vendors typically implement redundancy measures by backing up services across multiple machines and regions. This ensures that cloud services remain online and accessible to users at all times.

Users can access cloud services through web browsers or dedicated applications, connecting to the cloud via the internet. Regardless of the device being used, the connection takes place over interconnected networks, allowing users to utilize cloud services seamlessly.

2.3 Cloud Service Models

Software as a Service (SaaS): SaaS involves vendors delivering applications to end-clients as a service over the cloud. A wide range of SaaS offerings are available today, including general-purpose applications for organizations, specialized applications for specific industries, and client applications. Prominent examples of SaaS applications include Salesforce, MailChimp, and Slack.

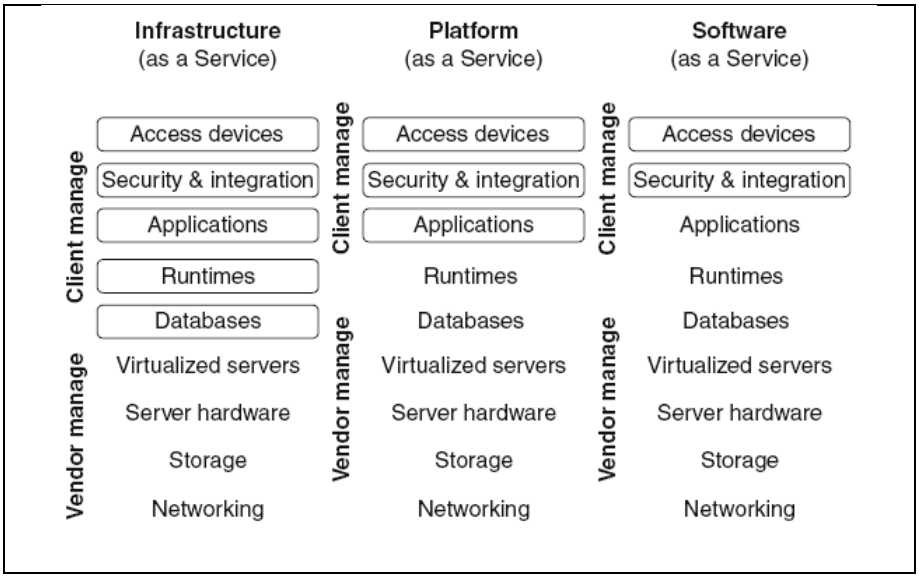
Platform as a Service (PaaS): PaaS provides platforms that enable the development and deployment of applications. Vendors offer these platforms as a service, allowing users to build, deploy, and manage applications in the cloud. A typical PaaS includes databases, middleware, and development tools. The network serves as the medium for delivering hosted applications. PaaS serves as an intermediary between IaaS and SaaS in the context of cloud computing. Notable PaaS examples are Heroku and Microsoft Azure.

Infrastructure as a Service (IaaS): IaaS focuses on providing essential technologies such as storage capabilities, network services, and computing power. It acknowledges the increasing commoditization of ICT infrastructures, often relying on virtualization for hardware resources. IaaS also encompasses virtualization, management, and operating system software components.

Over time, these service models have been enlarged to include other possible modes, indicated in general as XaaS, where X stands for a specific service.

BPaaS is particularly relevant in this regard. It is the provision of business processes as a service. It is a generalization of SaaS where the vendor not only provides the ICT systems but also uses the application to operate a full process on behalf of the client.

Figure-2: Breakdown of IaaS, SaaS and PaaS



Source: Nicoletti (2013)

2.4 Cloud Computing Deployment Approaches

According to Chen and Zhao (2012), cloud computing offers four distinct deployment methods: public, private, hybrid, and community clouds. These models vary in their features and implications for users, and the choice of deployment strategy depends on the specific goals and requirements of a business. To determine the most suitable deployment strategy, companies should conduct evaluations of performance, security, and reliability.

Public Cloud

Public clouds are commonly considered the optimal deployment strategy and are widely recognized as true cloud environments. These clouds are managed by cloud computing resource providers and offer services to the general public. Deployed through data centers and high-speed networks, public clouds are characterized by their multitenant capabilities, where different users have separate data that is not accessible to the public.

Private Cloud

Private clouds can be acquired through leasing or ownership and provide enhanced security standards, unrestricted bandwidth, and no legal obligations. The computing infrastructure in a private cloud is dedicated to a single organization and cannot be shared with other entities. Private clouds are preferred by enterprises that cannot host their data remotely, as they offer optimal infrastructure and security management, leading to improved resource automation and usage.

Community Cloud

Community clouds are distinct from public clouds and serve specific user groups with shared interests. These clouds provide resources to individuals and groups with similar interests, and the computing infrastructure can be located either on-site or off-site. Unlike public clouds where ownership and management are controlled by individual suppliers or owners, community cloud resources are owned and managed by one or more community contributors.

Hybrid Cloud

The hybrid cloud strategy combines elements from the aforementioned deployment methods. It involves a management framework that ensures a unified cloud environment. Organizations are increasingly adopting hybrid cloud approaches to address their evolving needs for flexible pricing, optimized performance, and enhanced security.

3.0 Review of Literature

The term cloud computing emerged in the fourth quarter of 2007 on a collaborative project between IBM and Google (Vouk, 2008). According to Mohamed (2009), in 2002 Amazon provided a suite or cloud-based services including storage, computation and even human intelligence through the Amazon Mechanical Turk. In 2006 Amazon launched Elastic Compute Cloud (EC2) as a commercial web service that allows small companies and individuals to rent computers on which to run their own computer applications.

In 2009, Google began providing enterprise applications through its Google Apps service, which could be accessed via a web browser, a development made possible by the advent of Web 2.0. The most significant impact on cloud computing has been the introduction of "killer apps" by major technology companies such as Microsoft and Google. These services are widely adopted by users when they are dependable and easy to use. This, in turn, has led to greater acceptance of online services throughout the industry as a whole (Taber, 2009).

The most well-known corporation currently adopting the cloud computing approach is Google, which offers a wide range of web-based apps via its cloud architecture. Some of these applications include Google Docs for word processing, Google Presentations for creating presentations, Gmail for email services, and Google Calendar for scheduling and calendar functionality. Other significant companies that have also adopted cloud computing include Microsoft, which offers its Windows Live suite of web-based applications, Amazon with its Elastic Compute Cloud (EC2) providing resizable computing capacity for application development, and

IBM, which has set up a cloud computing center to provide cloud services and research to its clients (Miller, 2009).

Prior to adopting cloud computing, organizations must have knowledge of this technology, its purpose, and its potential applications. A survey conducted by Market Connections in 2008 focused on cloud computing awareness among the U.S. defense/military and federal government sectors. The findings indicated that cloud utilization is set to experience significant growth as awareness of cloud computing increases. The analysis revealed that 34 percent of federal government respondents were unfamiliar with cloud computing. Additionally, three out of five respondents expressed a lack of trust in cloud computing, and 23 percent were unaware of their organizations' activities related to cloud computing. This research clearly highlights the limited knowledge of cloud computing within agencies involved in its implementation.

A survey conducted by Gartner in 2010 aimed to assess the level of awareness of cloud computing in the United States. The results showed that CIOs (Chief Information Officers) now possess a higher level of understanding regarding the cloud business. As a result, they are taking the lead in promoting commitment to the cloud environment. In another survey conducted by Morris in the same year, it was found that CIOs play a vital role as a primary source of awareness within organizations, particularly concerning cloud computing awareness and implementation initiatives.

According to Barnes (2010), there has been a significant growth in cloud adoption and awareness in the region. However, a considerable number of organizations remain hesitant to embrace it. A survey conducted by Ernst & Young in 2009, focusing on the adoption rate of cloud computing in India, found that 81% of Indian C-level executives were familiar with and aware of cloud computing concepts.

The level of cloud computing awareness in the Asia Pacific region (excluding Japan) was investigated in a 2009 study by Springboard. The results showed that there was a dearth of general knowledge about cloud

computing in this area. In the region, only 46% of poll respondents were aware with the idea of cloud computing.

Ellison (2010) states that the introduction of cloud computing has sparked interest among enterprises. However, it is evident that companies are currently exploring different possibilities and evaluating whether or not they should adopt this technology. This behavior raises doubts regarding organizations' willingness to embrace and venture into the realm of cloud computing.

Carolyn (2010) observed a noticeable increase in momentum within the realm of cloud computing, evident through rising adoption rates and a greater level of awareness. According to Carolyn, the adoption of cloud computing is still on the rise, and in the coming years, it will involve evaluation, experimentation, and, crucially, opportunities as the market navigates the involvement of IT channel companies, optimal business models, sales and marketing strategies, and the most relevant technologies.

A survey conducted by the Ponemon Institute in 2010, involving 642 IT executives in the United States and 283 in Europe, discovered that security concerns represent a significant obstacle to adopting cloud technology. Approximately half of the global IT organizations expressed uncertainty about whether anyone within their organization was aware of all the cloud computing services being used by end-users to store data. Larry (May; 2010) highlighted that the current risk associated with cloud computing is substantial due to varying levels of security offered by different cloud computing providers. This factor has contributed to organizations being reluctant to adopt cloud computing.

A survey was done by Harris (2010) with a focus on IT directors at major enterprise companies with 2,500–20,000 workers. The results showed that 77 percent of these businesses used cloud computing in some capacity. The study also probed the exact kinds of cloud computing models—private, public, or a hybrid—that these firms were prepared to use. Of the respondents who were already using cloud services, 50% used a private

model, 34% chose a hybrid strategy combining private and public clouds, and 43% intended to use the combination strategy even more in the future.

According to a survey conducted by LogLogic in 2010, which involved 82 of the world's largest banks, investment houses, and insurance companies, the financial service firms are cautious about adopting popular IT infrastructure investments such as cloud computing. This hesitance is primarily due to concerns regarding data security and transparency.

Although the financial services market has traditionally been at the forefront of adopting cutting-edge information technology, few companies in this sector expressed plans to invest in new technologies like cloud computing. The survey found that 34 percent of respondents did not consider cloud computing as a strategic priority for their company, while 26 percent believed their company was risk-averse towards cloud computing. Consequently, financial firms are apprehensive about embracing cloud computing due to persistent uncertainties regarding data security and transparency in the cloud (Churchward, 2010).

Hayes (2008) highlights the concerns about control and ownership when third-party services are entrusted with personal documents. There are questions regarding data migration if an organization switches service provider, as well as the potential loss of access to documents if the organization fails to pay. This underscores the need for well-defined policies and mutually agreed-upon service-level agreements (SLAs) to address these issues. This raises the question of how prepared organizations are to venture into cloud computing.

A study conducted in India (Tripathi, 2009) aimed to assess the willingness of organizations to adopt cloud computing technology. The findings revealed that cloud computing had not progressed beyond the awareness phase in many decision-makers' understanding. There was a lack of comprehension regarding the terminologies such as IaaS, PaaS, and SaaS, as well as the distinctions among public, private, and hybrid clouds.

Despite the fact that there are many researchers studying the adoption of cloud computing in different contexts, literature reviews show that the

majority of these studies mainly focused on organizational adoption of cloud computing and the technical aspects of its implementation. The table below highlights the areas of these research' concentration and demonstrates their emphasis.

Table-1: Literatures on Factors Affecting Cloud Computing Adoption in Different Areas

Author(s)	Context Area	Factors affecting cloud computing adoption
Lian (2015)	E-government	Effort expectation, social influence, trust, perceived risk, security concerns, behavioral intention
Tehrani and Shirazi (2014)	Small and Medium Enterprises (SMEs)	Relative advantage, complexity, privacy, security, cost, external support, decision maker's innovativeness, decision maker's cloud knowledge, employee's cloud knowledge, information intensity
Rani and Gangal (2012)	Banking	Security, privacy, confidentiality, data integrity, availability, recoverability
Sultan (2010)	Education	Performance, latency, security, privacy, reliability, cost
Benton (2010)	Banking	Cost saving, security, data privacy

According to Radwan et al. (2017), there are distinctions between traditional data centers and cloud data centers in terms of their features. While both types of data centers are responsible for carrying out their respective tasks, they differ in terms of hardware and software configurations required for operation and service delivery.

4.0 Global Cloud Adoption Status by the Banking Sector

According to the British Bankers Association, the primary reasons that banks are turning to cloud-based services can be summarized as follows:

Cost-saving advantages: Traditional banks heavily rely on capital-intensive IT infrastructure. In contrast, cloud services offer cost-saving benefits by providing higher capacity compared to server-based applications. This enables banks to reduce costs while benefiting from the scalability and efficiency of cloud solutions.

Risk reduction: Cloud solutions help banks mitigate risks associated with resiliency, redundancy, and capacity. They have the ability to quickly detect and address various threats and vulnerabilities. With the cloud's capacity to process a large number of transactions per second, banks can more effectively combat money laundering and fraud compared to previous methods.

Increased flexibility: Migrating to the cloud allows banks to shift resources from IT administration to innovation, resulting in increased productivity and agility in both internal and external processes. Cloud-based solutions offer banks greater flexibility to transform their operations and meet the ever-changing demands of their customers.

Despite the undeniable benefits of cloud computing technology, banks have been slow in fully adopting it. According to sources cited by Forbes in July 2019, including the Financial Times, many financial institutions are falling behind in their goals to embrace innovation. Security concerns are identified as one of the main obstacles to cloud adoption in the banking sector.

Regulatory implications also impact the speed of cloud adoption. Banks must ensure service continuity for their clients during the migration to the cloud and have contingency plans to revert to in-house databases in case of any failures with cloud services. The European Banking Authority has provided recommendations to financial organizations regarding cloud migration, emphasizing the importance of data protection, risk mitigation, and other security concerns.

The adoption of cloud-based technology in the banking industry requires the consideration of the interconnected interests of banks, regulators, and cloud service providers. Collaborative efforts among all stakeholders are essential to accelerate the migration process to the cloud and achieve successful outcomes.

The following section shows some case studies on cloud adoption by banks in global context.

Box-1: ING Bank Builds a Hybrid Cloud

"ING, a global banking and financial services organization with assets in excess of $1.7 trillion, is investing in cloud computing. In 2008, ING had many data centers (16 in the Netherlands alone) which were obsolete, saturated and inefficient, with a fragmented architecture and slow processes. The costs were 24 percent above the market average. A first phase of a project to consider cloud computing brought the elimination of 13 data centers, virtualizing over 6000 servers and 350 applications. It has cut by 35 percent the number of managers and created new teams for the direct support to internal customers and delivery processes. In early 2011, new business pressures triggered another round of interventions; ING created a private cloud going down to six data centers. It has implemented a virtualization of the servers, desktops, and applications. Now the bank is considering becoming a broker of internal and external services on the cloud. ING's investment involves the construction of a large hybrid cloud. It combines the features of public clouds and private data centers. ING hopes that other banking and financial service organizations will use this investment. The hybrid or shared ICT infrastructure helps to bring forth variable costs, scalability, flexibility, and on-demand availability. These benefits should help overcome the concerns of banks and financial services organizations. Those concerns are related to security, compliance, and performance procedures that financial services organizations follow in their internal data centers. With a hybrid approach, ING will start with total control over the physical environment in which servers, storage, and applications reside. As public cloud service level agreements are better understood and as regulations develop, more solutions can shift to cheaper and easily scalable cloud venues."

Source: Alexander, S. (2011)

Box-2: The Commonwealth Bank of Australia (CBA)

"The Commonwealth Bank of Australia (CBA) stated that they would never buy another rack, server, storage, or network device again. It aims not to be locked into proprietary hardware, software, or network solutions. The Sydney-based Commonwealth Bank of Australia is a member of the Tele Management Forum's Enterprise Cloud Leadership Council, which evaluates vendors on the use of their cloud services. CBA's comments encapsulate the two clearest benefits of cloud computing for financial institutions:

- The ability to buy on demand computing capacity, storage, network, bandwidth and so on. In this way, it is possible to pay only for what is used rather than buying hardware or software up front or paying a pre-set annual subscription fee; and
- The speed and ease of provisioning and managing hardware, software and network services when the institution goes into a private or public cloud."

Soruce: Crosman, P. (2010)

Box-3: Cryptomatic the Market's First Cloud Wallet

"Cryptomatic has invented what it claims as the market's first Cloud Wallet. The Cloud Wallet enables a secure payment application to run off a connected trusted platform that is accessible through a network such as Internet. It securely links the user and all their devices – such as smartphones, tablets, or personal computers – to their wallets."
"Visa, the credit-card scheme, used cloud computing to crunch two years of test records, or 73 billion transactions amounting to 36 terabytes of data. The processing time fell from one month with traditional methods to 13 minutes."

Source: (2012) "Cryptomatic invents cloud wallet," Payments Cards/Mobile, March–April

Box-4: La Caixa Achieves Business/ICT Alignment

"La Caixa is Spain's largest savings bank and the country's third largest finance organization. La Caixa follows a multichannel management strategy that leverages advanced technologies and skilled employees to provide high quality and comprehensive banking services to its customers.
To power its 5300-plus locations and network of more than 8000 ATMs (the largest in Spain), La Caixa relies upon a complex technology landscape comprising large mainframes, thousands of servers, and more than 1000 network devices.
La Caixa worked with external consultants to define a multigeneration plan to move in the direction of a private cloud. The first phase was the installation of automation tools. In this way, La Caixa was able to enforce compliance in an automated manner."

"The project is multiphase:

- In phase one, the team carefully mapped the written security policies into rules – ensuring strict adherence going forward. The first phase in the transformation project includes virtual and physical server provisioning and server and network device monitoring;
- Phase two of the project expands the solution to all platforms in La Caixa's infrastructure. It adds further automation and self-service features. This phase also introduces a single, consolidated configuration repository and customized management dashboards. In this way, it sets up the basis for a lower-cost internal cloud computing service delivery model; and
- Phase three offers support and maintenance services. They will keep the bank's ICT services running at peak performance for years to come."

Source: (2011) "La caixa achieves business/IT alignment," Unisys case study, http:// www.unisys.com/unisys/inc/pdf/casestudies/11–0055.pdf, Retrieved May 13, 2012.

Box-5: AmBank Places Sourcing Function in the Cloud

"Malaysia-based AmBank Group moved its sourcing function into the cloud after signing a deal with a third-party service vendor. The financial services institution wanted to optimize procurement and spend management, and to drive savings and efficiencies across its operations. AmBank decided to use a cloud services vendor in order to use best practice processes to improve the effectiveness of its operations.

The solutions enable AmBank to identify opportunities for significant savings opportunities across a number of spend categories and to incorporate visibility and rigor into its internal processes"

Source: http://www.procurementleaders.com/news-archive/news-archive/ambank-dep osits-sourcing-function-in-the-cloud?highlight=cloud%20banking. Retrieved June 4, 2012.

Box-6: The Spanish Bank Bankinter Uses a Cloud Service as an Integral Part of Their Credit Risk Simulation Application

"Bankinter develops and run complex algorithms to simulate diverse scenarios for evaluating the financial health of its clients. This requires heavy computational power to process at least 400,000 simulations in order to get realistic results. By using the cloud, the bank was able to carry out a simulation reducing the time on the average necessary from 23 hours to 20 minutes."

Soruce: (2012) AWS Case Study: Bankinter, http://aws.amazon.com/solutions/ case studies/bankinter/ Retrieved August 17, 2012.

Box-7: Adoption of Cloud in the Banking Industry – India Success Stories

"There are several early success stories of banks in India adopting cloud computing for optimizing their processes, reducing their costs, and building the capability to scale rapidly. Some of the known/published references are discussed below. It is worth noting that while Urban Co-operative Banks (UCBs) and Regional Rural Banks (RRBs) have been early adopters of cloud computing, as described below, we can expect that larger banks will move towards cloud services as regulatory issues and security challenges are addressed.

Two major software solution providers have provided their Core Banking Solutions (CBSs) to UCBs, RRBs, and district co-operative banks through their own data centers. Some of the major UCBs have also been providing IT support to the small UCBs while leveraging collaborative arrangements among themselves for sharing common IT infrastructures such as data centers and ATM networks. It was observed that these banks were located across India, the geographical proximity or separation was neither a constraint nor a contributory factor, and cloud services were geography-neutral due to availability of good telecommunications networks.

FIs such as Kotak Mahindra Life Insurance, Reliance General Insurance, and IndiaFirst Life Insurance have adopted virtualization solutions to help improve efficiencies of their

data centers. Dhanlakshmi Bank has opted to move all of its non-core banking applications to a virtualized solution allowing reuse of old storage boxes. Nawanagar Co-operative Bank has engaged with a cloud service provider to deploy CBS on a hosted cloud services model. ShamRao Vithal Bank partnered with a cloud service provider to offer cloud-based solutions to other co-operative banks in its region.

India is home to a large number of urban and rural co-operative banks. These banks are facing challenges in many aspects and are trying to transform themselves in a complex business environment. Stiff competition is also putting banks under pressure to become more efficient and agile. Four co-operative banks in India – The Co-operative Bank of Rajkot (Gujarat), Shivajirao Bhosale Sahakari Bank (Maharashtra), Goa State Cooperative Bank, and Tumkur Veerashaiva Co-operative Bank (Karnataka) – have adopted hosted solutions to improve their operational efficiency and compete more effectively. As per the company's media release, this solution will enable these banks to set up a cost-effective and energy efficient data center to offer new services like ATM, mobile banking, and online banking to customers. As a customized, pre-packaged data center primarily for small and medium businesses, the solution will also help the banks reduce their energy consumption by 2%.

Pondicherry Co-operative Urban Bank uses a cloud computing solution to offer more customer-centric services and to establish a robust banking operation. By implementing this multi-tenant IaaS on the cloud, the bank will be able to offer state-of-the art financial solutions to its customers including Internet banking, online money transfer, ATM, and mobile banking. This will also help the bank to centralize its mission critical operations such as real-time transaction processing across its six branches in Pondicherry. This is implemented as a shared private cloud for compute and storage with the ability to rapidly provision capacity for additional branches as required.

YES Bank has adopted cloud computing and has been an early adopter of cloud-based services in banking with the first implementation in payments, online account opening, and remittance services. Cloud computing provides the bank flexibility in faster provisioning at a low cost.

Meghdoot is an open cloud initiative of the Centre for Development of Advance Computing (C-DAC), a cloud computing environment completely based on free and open source software. The Indian Banking Community Cloud has been established using Meghdoot in the Institute for Development and Research in Banking Technology (IDRBT), Hyderabad (established by the RBI). The community cloud was inaugurated by the Governor of the RBI and currently six banks have applications ported into the Meghdoot cloud."

Source: The Open Group (2015)

5.0 Findings and Analysis

5.1 Awareness of Cloud Computing in Different Levels of Banks

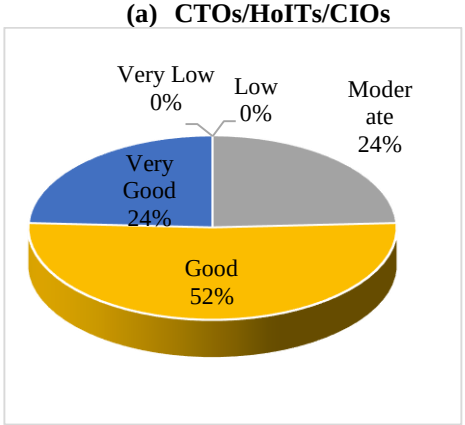
Figure-3 (a and b) illustrates that 24 percent of the CTOs/HoITs/CIOs has a very good level of understanding regarding cloud computing. Almost same level of knowledge is seen in case of IT teams of banks. HoITs and the IT teams are the key implementers of cloud technology in banks, so they must have an excellent understanding of the technology. Otherwise, it will bring negative results for the organization. Board Members and Top-Level Management are the ultimate policy and decision maker. So, they need a clear understanding of the technology. Understanding of Top-Level Management and Board Members regarding cloud computing is shown in figure-3 (c and d).

5.2 Participation of Local and International Programs (CTOs/HoITs/CIOs)

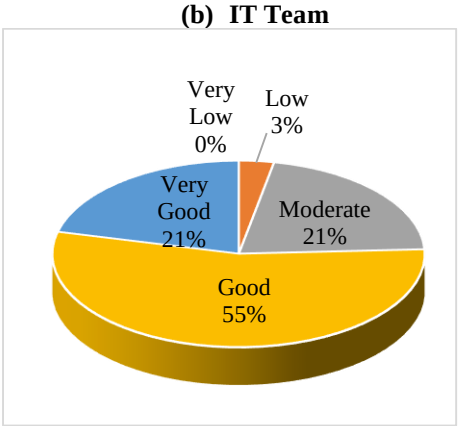
Figures 4(a) and 4(b) depict the percentage of CTOs/HoITs/CIOs who attended different local and international programs in last two years. It is seen that 57.6 percent of the respondents attended local seminars and vendor-programs. The scenario is different in case of international programs. Only 15 percent respondents attended international programs organized by vendors and 12 percent respondents attended cloud computing related international meetings. The graphs also indicate that participation in different programs in home and abroad by CTOs/ HoITs/ CIOs is satisfactory.

Figure-3: Understanding about Cloud Computing

(a) CTOs/HoITs/CIOs



(b) IT Team



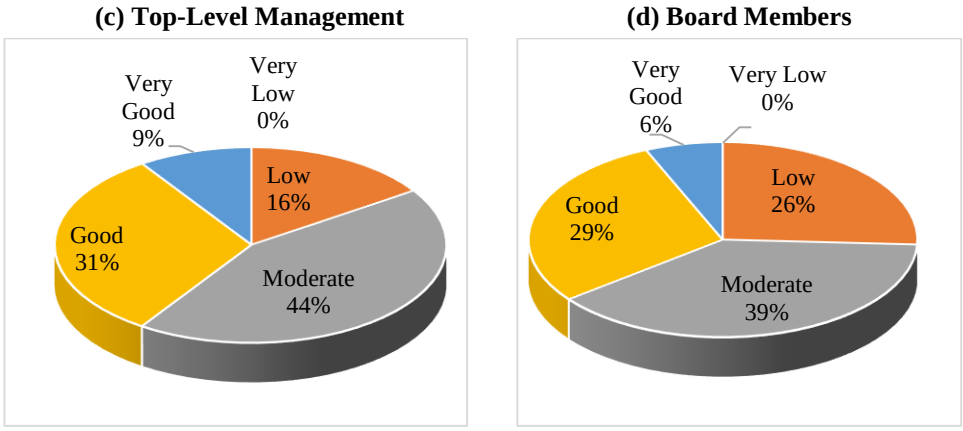
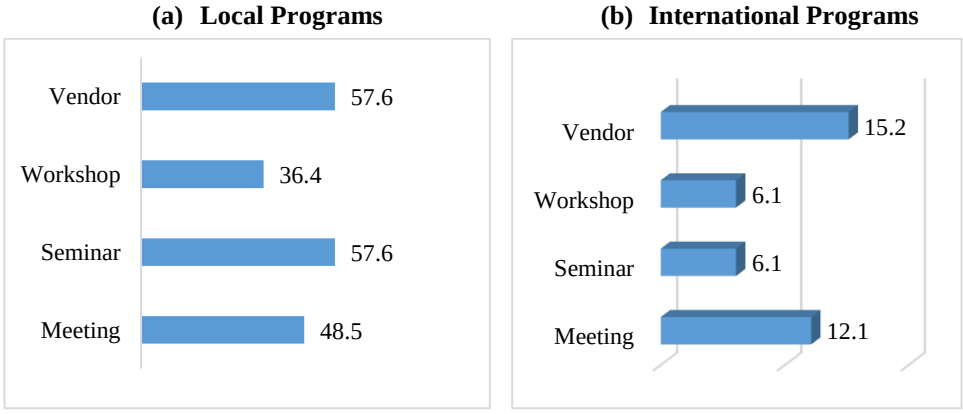


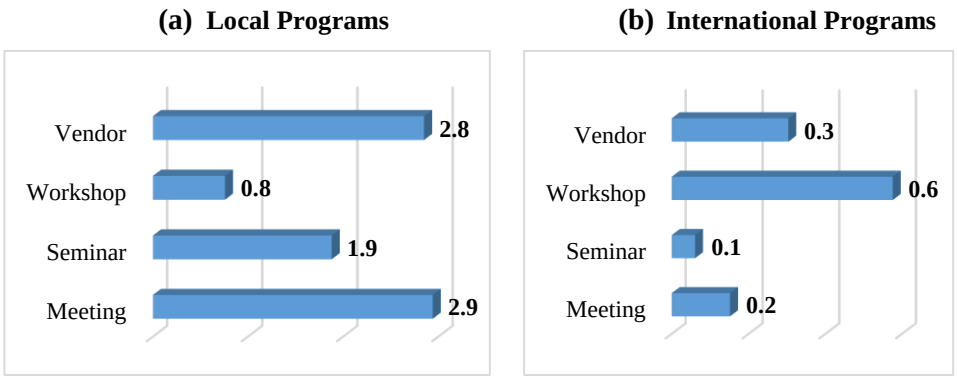
Figure-4: Percentage of CTOs/HOITs/CIOs Attended in Different Programs in last two years



5.3 IT Employees Attended in Different Local and International Programs

IT employees are the critical enablers of implementing new technologies in banks. The survey found that the average number of IT employees attending different meetings on cloud computing programs were 2.9 and 2.8, respectively. On the other hand, average 0.6 IT employees attended different international programs. Before implementing new technologies, acquiring knowledge from national and international sources is essential. However, IT employees need to attend various programs in the local and international domains.

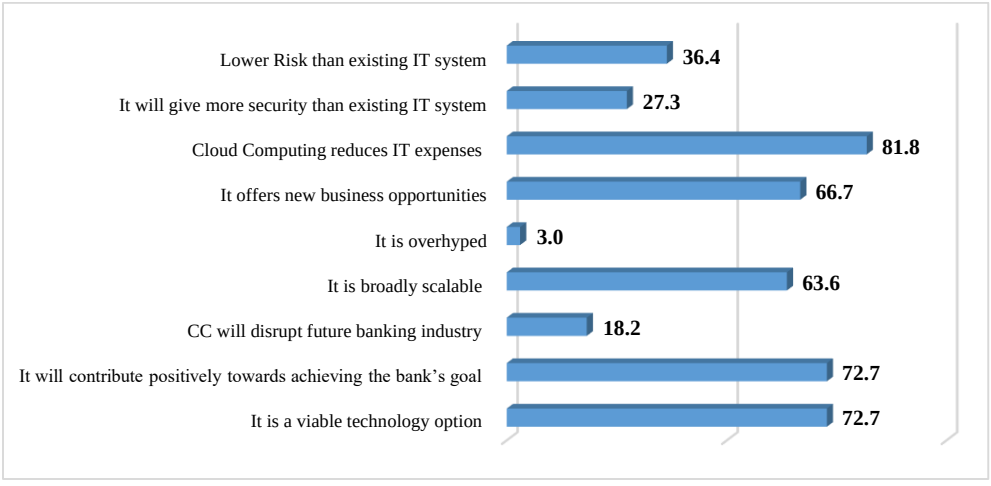
Figure-5: Average No. of IT Employees Attended in Different Programs in last two years



5.4 Perception of HoITs regarding Cloud Computing

The following figure shows the perception of the Heads of Information Technology (HoITs) regarding cloud computing. Approximately 82 percent of the HoITs agrees that cloud computing reduces costs.

Figure-6: Perception of Heads of IT Regarding Cloud Computing (% of HoITs)

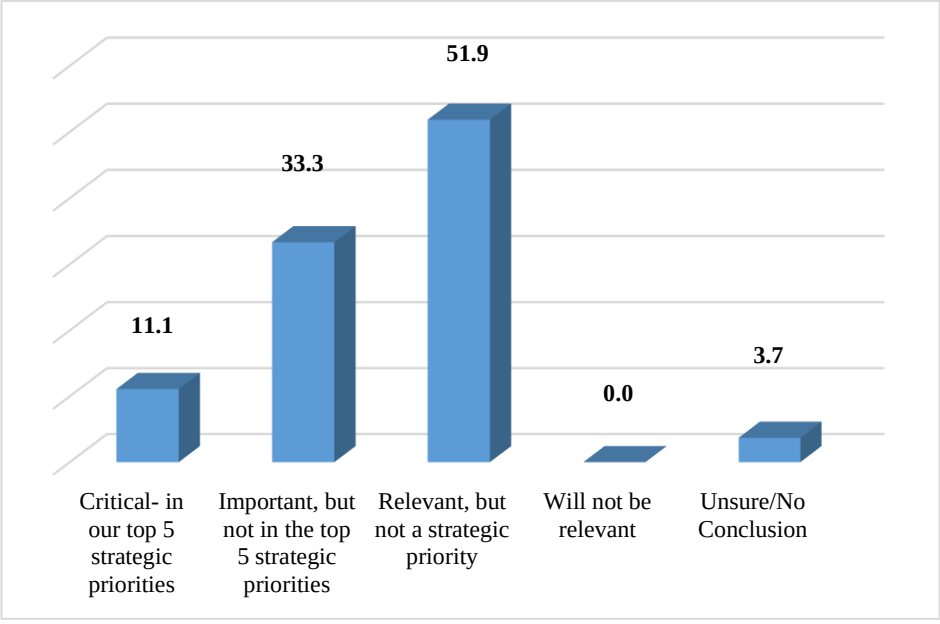


About 72.7 percent believe that cloud computing will contribute positively towards achieving the bank's goal and is a viable technology option for banks. Very few think that the technology is overhyped, which indicates that the future of this technology in banking is constructive. However, many believe the technology will bring new business opportunities for banks.

5.5 Relevance of Cloud Computing in Banks

Figure-7 shows the relevance of cloud computing in banks. It is seen from the survey that 51.9 percent of banks agree that cloud technology is relevant for them but not a strategic priority. On the other hand, only 11 percent of banks set cloud technology as critical in their top five strategic plan. About 33.3 percent of banks have given importance, but it is not in the top-five strategic priorities. Around 3.7% banks are not sure about the relevance of cloud computing in banks.

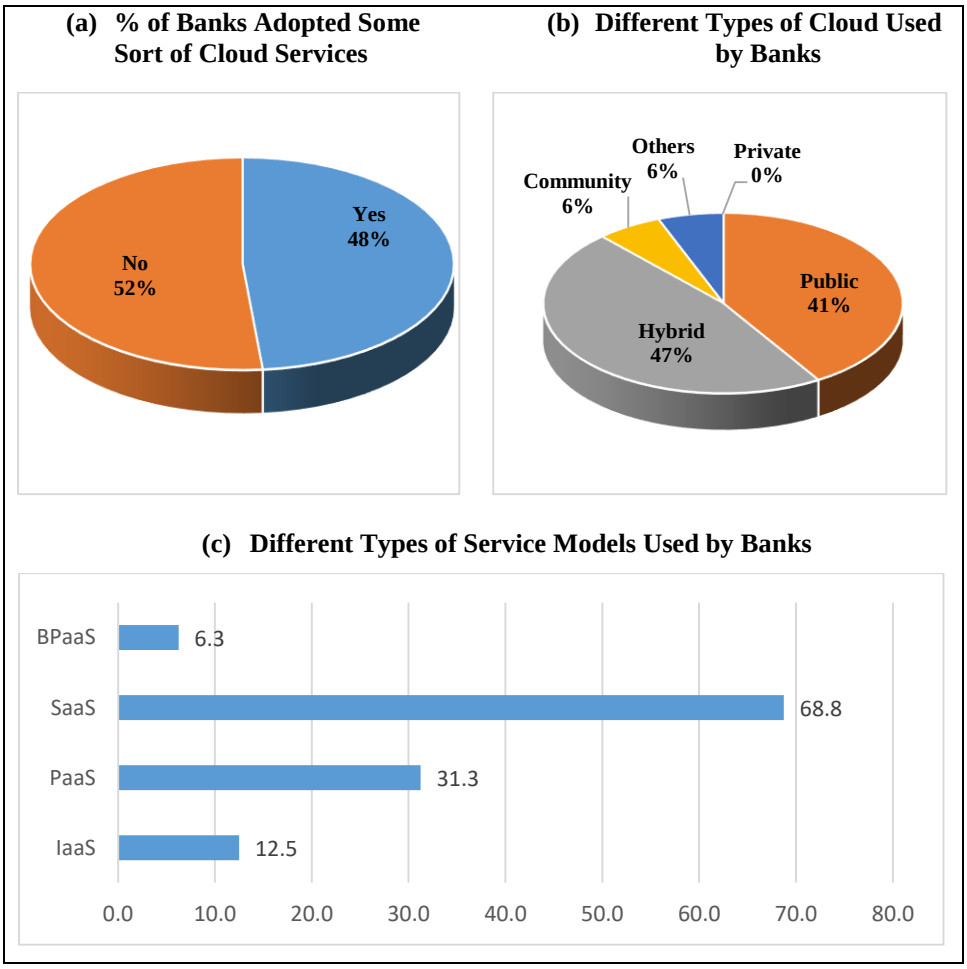
Figure-7: Relevance of CC in Banks (% of Banks)



5.6 Status of Cloud Services Adoption in Banks

Figure-8 illustrates that 48 percent of banks adopted some sort of cloud services. The respondent banks that adopted cloud services in hybrid and public clouds. It is seen that 47 and 41 percent of banks used hybrid and public clouds, respectively. However, banks use different cloud service models like SaaS, PaaS and IaaS offered by cloud service providers. The survey shows that approximately 68.8 percent of banks use SaaS and 31.3 percent use the PaaS model. Very few banks use IaaS and BPaaS as cloud service models.

Figure-8: Cloud Services Adoption in Banks



The services that banks have already adopted from cloud service providers are: Microsoft 365 services, Email security, Web security, Microsoft Exchange Server, Oracle Management Cloud, Video Conferencing System, Zero-day attack prevention, Mobile Device Management, Face Matching Service for e-KYC, End user behavior analysis, Vulnerability assessment, Secure web gateway, Next generation firewall, Project Plus, Adobe PDF Writer, Bulk Mail Service, Helpdesk, Web Hosting, ERP, etc.

5.7 Factors Preventing Cloud Adoption

Table-2 identifies some critical factors based on the rank sum approach that hinder the adoption of cloud services in banks. Legal and regulatory compliance gets the highest ranking among all other factors, followed by data security, loss, and leakage risk. It is also seen that government restrictions and the complexity of moving applications to the cloud are critical factors that are preventing banks to move into cloud services. However, factors like integration with the existing IT environment, fear of vendor lock-in, and expensive/budget constraints have rank sum values greater than 100 that adversely affect banks' cloud adoption.

Table-2: Factors Preventing Cloud Adoption

Sl. No.	Factors	Rank Sum
1.	Legal and regulatory compliance	177
2.	Data security, loss and leakage risks	160
3.	Security concerns	159
4.	Government restrictions	157
5.	Complexity of moving application to cloud	146
6.	Loss of control due to third party management	134
7.	Integration with existing IT environment	122
8.	Fear of vendor lock-in	113
9.	Expensive/Budget constraints	108
10.	Lack of staff resources or expertise	91
11.	Internet speed	87
12.	Decreased flexibility: Special customization not possible	84

5.8 Planning to Migrate into Cloud in Next Two Years

Though 48 percent banks have adopted cloud services partially, rest of the 52 percent banks are planning to move into cloud services by the next two years. Approximately 70 percent of those banks (52% of total) that do not have cloud services are willing to adopt it within the next two years. Table-3 shows the percentage of banks that are planning to adopt various services from cloud service providers. It is seen that about 62 percent of banks are willing to get IT support services, followed by office automation (38%), human resource management (38%) and CRM (38%). Twenty-four percent

of banks expect to adopt call center facilities and 19 percent show eagerness to adopt various application software from cloud service.

Table-3: Expected Services from Cloud Service Providers

Sl. No.	Expected Services	% of Banks
1.	Office Automation	38.1
2.	IT-Services Support	61.9
3.	Human Resource Management	38.1
4.	Enterprise Resource Planning	19.0
5.	Customer Relationship Management	38.1
6.	Governance	14.3
7.	Call Center	23.8
8.	Risk Analysis and Management	19.0
9.	Control and Compliance	14.3
10.	Application software	19.0
11.	Digital Innovations	14.3
12.	Software for overseas exchange house	4.8

5.9 Preference of CSPs and Services by Banks

The following figures (9 and 10) show the preferences of service providers (CSP) by the respondent banks, along with the expected services from the CSPs. It is seen that most banks preferred AWS (61.5%) followed by Microsoft Azure and Oracle Cloud. However, services from local cloud providers are demanded by 23 percent banks. SaaS is preferred (69.2) by Bangladeshi banks followed by PaaS (53.8) and IaaS (46.2).

Figure-9: Preferred Cloud Companies by Banks (% of Banks)

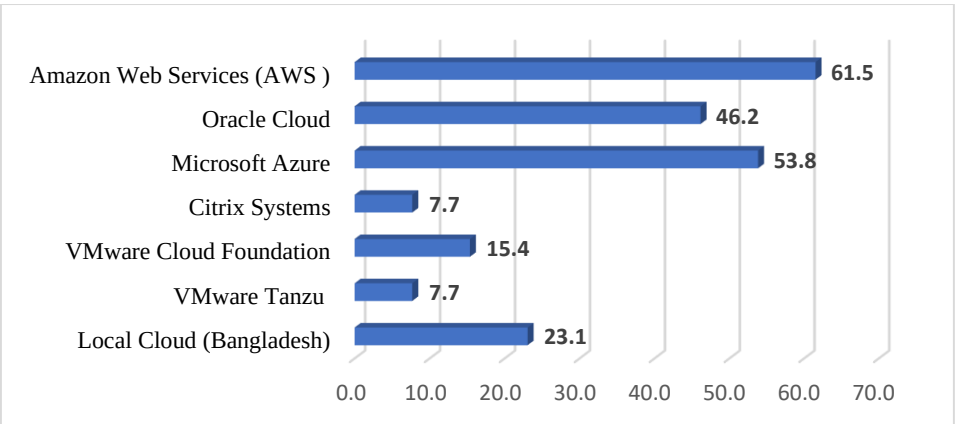
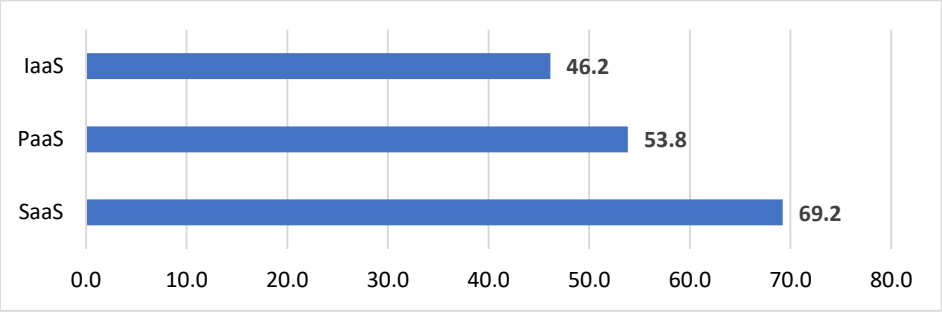


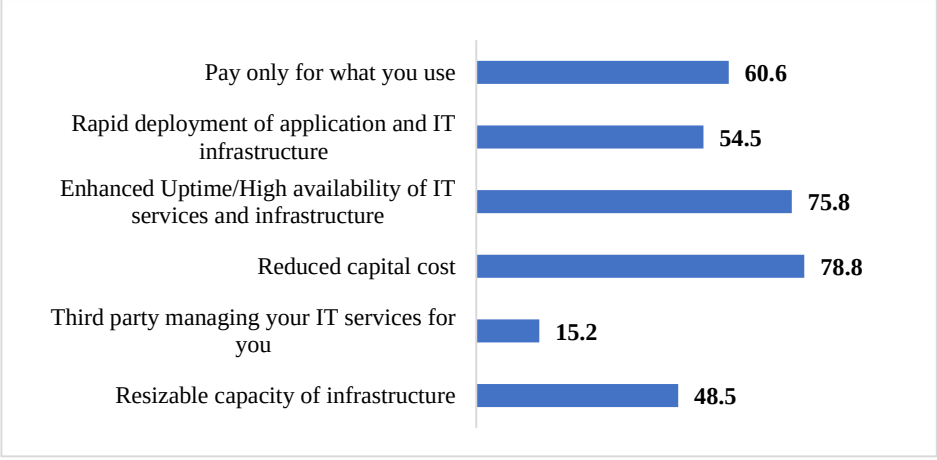
Figure-10: Preferred Services from Clouds (% of Banks)



5.10 Factors that will help the Adoption of Cloud Computing in Banks

Figure-11 portrays the factors driving the banks to adopt cloud computing. 78.8 percent of the respondents believe that cloud computing reduces capital cost, followed by high availability of IT services and infrastructure. Designing, developing, and maintaining a data center, disaster recovery (DR) site and a far DR are becoming complex for banks. So, the two vital factors, reduced capital cost and high service availability, inspire banks to move into cloud service. However, pay-per-use and rapid deployment of applications and IT Infrastructure are other factors that responded by 61 percent and 55 percent, respectively.

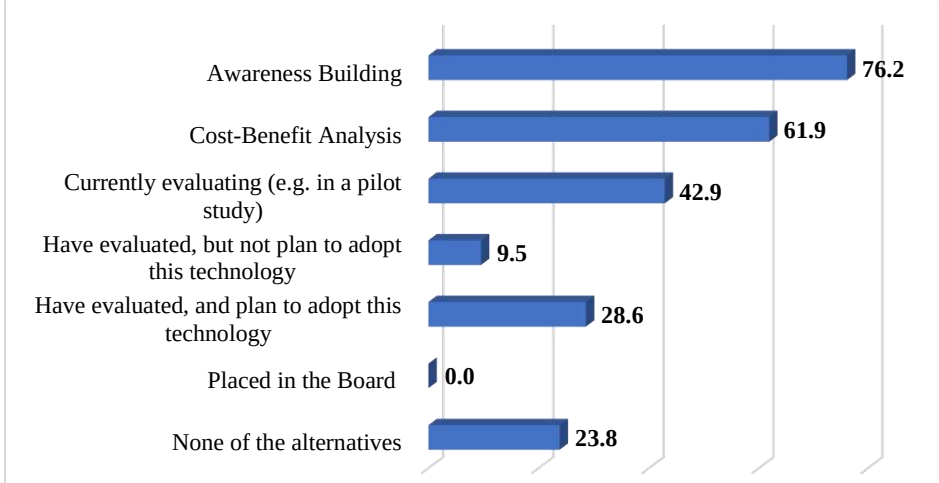
Figure-11: Factors that will Drive Banks into Adopting Cloud Computing



5.11 Current Position of Banks regarding Cloud Adoption

About 52% of banks do not use any cloud services in Bangladesh. The survey shows that approximately 76 percent of the banks who have not adopted any cloud-based services are building awareness regarding Cloud Computing, whereas sixty-two percent of banks have already analyzed the cost and benefits of the services. Some banks are evaluating the service; others have already assessed and plan to adopt cloud technology. It is also seen that 24 percent of the banks do not take any initiatives regarding cloud computing services.

Figure-12: Current Position of Banks regarding Cloud Adoption (% of Banks)



5.12 Cloud Computing Opportunities Identified by Banks

The following table summarizes the opportunities of cloud computing identified by the banks.

Table-4: Cloud Computing Opportunities

Sl. No.	Opportunities	% of Banks
1.	For developing countries like Bangladesh Cloud Computing aims to provide the clients a cost effective and convenient means to manage the huge amount of IT resources (Banks and FIs will not have to invest heavily in dedicated hardware, software, and its implementation) and thus offer strong possibility of accelerating	74

Sl. No.	Opportunities	% of Banks
	social and economic development, even in this time of limited resources.	
2.	Cloud computing will unveil the opportunity to deploy service faster. Compared to legacy investments, cloud computing will offer a greater return on investment and the benefits of a contemporary, scalable, and secure infrastructure.	84
3.	Cloud computing will provide a massive level of redundancy and data backup at a low cost. Banks and FIs can achieve greater levels of fault tolerance, data protection and disaster recovery capabilities by adopting Cloud Computing for the business-critical services.	96
4.	Banks and Financial Institutions (FIs) can leverage the processing power of Cloud Computing to analyze customer data real-time using AI and advanced analytics. With analysis available instantly, Bank or FI can understand customer behavior and engage proactively by providing individual customer a sense of personalization.	89
5.	The standardization in Cloud Computing eliminates the complexity of integrating new systems and services with the existing systems, as a result banks and FIs will be able to roll out new products and services much faster.	70
6.	All the major banks run their own data centers, which house computer servers that process vast troves of customer account data, payment records and trading logs. Running the machines is costly because they require a lot of electricity and need to be kept in air-conditioned rooms. So, here is a huge scope of reducing cost and consumption of energy by incorporating cloud computing in Bangladeshi Banks	70
7.	Cloud computing allows employees to be more flexible in their work practices employee can access data from home, on holiday, or via the commute to and from work and it ensure no data loss or leakage of data.	84
8.	Cloud computing or services are usually flexible, and the business can expand or reduce them as needed for organizational changes, market demands and cyclical business models, and to respond to unexpected opportunities/challenges. Cloud computing or services allow the business to focus on its core operations, and enable its IT personnel (if any) to focus on supporting its initiatives.	78

5.13 Expectations of Banks from Bangladesh Bank

Bangladesh Bank has taken numerous actions for smooth e-banking operations in our country. However, bankers are expecting more from the regulator. The following table shows some of the expectations regarding cloud computing from Bangladesh Bank.

Table-5: Expectation from BB

Sl. No.	Expectations	% of Banks
1.	Bangladesh bank may prepare a well-defined guideline for using cloud. A strong policy ensuring security for deployment cloud computing is highly expected.	94
2.	BB may arrange awareness sessions/meetings for senior management regarding cloud computing.	84
3.	Bangladesh Bank may take initiatives to develop a community cloud where all banks will participate. Bangladesh Bank may introduce Cloud friendly software (SaaS) for regulatory and monitoring purpose (Example: CIB, IAS, e-KYC etc.) including APIs.	90
4.	Bangladesh Bank may formulate appropriate polices for cloud service providers serving the banks. BB may publish a list of cloud service providers with ranking regularly (quarterly/half-yearly/yearly) to reflect the support service track record. It will create healthy competition between CC service providers and influence other banks to adopt further services to migrate.	64
5.	Bangladesh Bank may monitor and guide the cloud computing implementation of financial and non-financial institute. BB could monitor the security and data protection measures banks must ensure to use CC capabilities.	78
6.	BB may provide legal and regulatory compliance issues for service providers.	64
7.	Bangladesh Bank could assign a dedicated monitoring and audit team to check all the cloud computing service providers. CC service providers should be audited frequently to check the error logs, customer complaints and resolutions. The audit team may be formed with certified experts on Cloud Computing technology.	78
8.	The regulator (Bangladesh Bank) might assist Bangladesh Government for developing local cloud infrastructure. Central Bank may work with relevant policy makers and the government so that the national cloud policy allows the banks to benefit from expertise and services of the world class International Cloud Service providers while safeguarding sensitive data (as opposed to restricting it altogether).	54

5.14 Expectation from Bangladesh Government

With the vision 2041, Bangladesh Government is proactively taking number of initiatives for ensuring a sustainable digital economy. As part of digital vision of Bangladesh government, the financial sector gets top priorities. Respondent banks have some more expectations from digital friendly government. The following table demonstrations some of the important expectations regarding cloud computing from Bangladesh Government.

Table-6: Expectation from Bangladesh Government

Sl. No.	Expectations	% of Banks
1.	Government may adopt data privacy and security law like GDPR (General Data Protection Regulation) for data security and cross border agreement for data sharing and ensure its executions accurately. As a result, banks in Bangladesh will be inspired and encouraged to procure cloud computing services.	90
2.	Bangladesh Government may make legal agreement with the world's leading cloud service providers regarding Data Privacy and Security.	78
3.	Bangladesh Government may encourage well-known Cloud Platforms Like Oracle, AWS, and Microsoft Azure to invest and setup private cloud within our country. This will build trust for the financial organizations that data will be within Bangladesh and in case of any forgery activity organization can enforce Bangladeshi law. Cloud market player presence in Bangladesh will boost the cloud computing usages.	96
4.	Government may introduce policy and take long term plan to bring out many local Cloud Service Providers (CSPs) to encourage development of local cloud infrastructure limit the foreign dependency.	84
5.	Bangladesh Government may help to develop Information Security Insurance company.	64
6.	Government may have control on overall price cap of cloud related services.	52
7.	Availability of high-speed Internet connections with strong stability and lower cost for organizations may be ensured by the government to adopt CC.	84

Sl. No.	Expectations	% of Banks
8.	Government may plan for developing high quality manpower for cloud market.	72
9.	Bangladesh Government has already introduced cloud service to Government and Non-Government organizations known as National Data Center (NDC). NDC maintains cloud services with global standard and accepted procedures but should enhance the existing connectivity features for cloud computing.	42

5.15 Challenges and Remedies

Cloud Computing has numerous benefits in banks although it has some challenges. Beyond the theoretical concepts, practical challenges are much more complex and difficult to handle. The following challenges with probable solutions of cloud computing in banks have been identified by the respondent banks.

Table-7: Challenges and Remedies

Sl. No.	Challenges	% of Banks	Probable Solutions
1.	Govt./Regulatory Restrictions	96	Government and Central Bank may consider withdrawing restrictions on storing sensitive data in local/international cloud inside/outside Bangladesh with setting up proper control and safeguard of the information with due approval process.
2.	Risk Mitigation/Vendor Lock-in/ Performance/ Availability	84	When business applications move to a cloud or a third-party vendor performance starts to depend on service provider as well. Investing in the right cloud service provider is a challange. Before investment, we should look for providers with innovatory technologies. The performance of cloud-based systems are linked to the provider's systems as well. Be cautious about choosing the provider and investigate that they have protocols to mitigate issues that arise in real-time. Increased application resiliency is needed to ensure continuity by greater range of infrastructure in

Sl. No.	Challenges	% of Banks	Probable Solutions
			multiple clouds (data centers) and geographies. Service provider must be available when required. The main focus should be given on sustainability and reputation.
3.	Dependency on Foreign Cloud Infrastructure	64	Establish effective local cloud infrastructure. Data should reside in local clouds of our country to ensure privacy. Bangladesh Bank may take initiatives to develop a community cloud where all banks will participate. Government may review and plan to leverage the service in BD or plan to setup such for all the Bangladeshi Banks.
4.	Data Privacy/ Security	96	The topmost concern in investing in cloud services is security issues in cloud computing. It is because data gets stored and processed by a third-party vendor and we cannot see it. Cloud service user and Cloud Service Providers should ensure all critical data are encrypted and only authorized users should have access to the data. Enhanced Information & Cyber Security posture is required. Bank can adopt cloud computing technology phase-wise considering the security concerns. Cloud security is different from on premises security; hence we need to ensure security as per cloud security standard. Strong SLA needed containing right to audit, penalty on security breach, arbitration clauses etc. with Cloud Service Providers (CSPs).
5.	Integration with Existing IT Environment/ Complexity of Moving Application to Cloud	84	Compute capacity to meet business needs – scale up or down. Banks need faster integration and development of new business models with clients, business partners and market places. Cloud computing services should have the capacity to integrate smoothly with the on-premise IT. Banks may conduct extensive PoC with OEMs and their partners.
6.	Cost Effectiveness	48	For greater cost transparency and control, reduce spend on procuring hardware & facilities and the

Sl. No.	Challenges	% of Banks	Probable Solutions
			associated operations by moving to on-demand usage of IT services on a pay-as-you-go. OEM should offer minimal charges for SLA and AMC. Government may give tolerable price cap.
7.	Legal Framework/ Data Sovereignty Regulations	84	Banks seek legal framework in place for adopting cloud computing. Banks must ensure local and international legal stuffs are aligned in the field of CC to ensure data sovereignty and educate CC users accordingly. Regulatory policy and guidelines is required.
8.	Lack of Expertise and Awareness	96	With the increasing workload on cloud technologies and continuously improving cloud tools, the management has become difficult. There has been a consistent demand for a trained workforce who can deal with cloud computing tools and services**.** Proper training/workshop/ seminar should be arranged by banks/BIBM/BB on regular basis to get aligned with latest technology of CC.
9.	Control/ Governance	64	Maintaining proper control over asset management and maintenance is another issue. There should be a dedicated team to ensure that the assets used to implement cloud services are used according to agreed policies and dedicated procedures. There should be proper maintenance to ensure that the assets are used to meet organization's goals successfully. The team should have the ability to acquire frictionless IT services and automation of software deployment and maintenance processes. Bank's IT team should focus on banking products/process and Cloud Service Provider should focus on IT infrastructure and facilities.
10.	Bandwidth and Availability of Network	84	Network service providers should improve quality and upgrade nationwide existing network with latest technology (4g and 5g). Two or more

Sl. No.	Challenges	% of Banks	Probable Solutions
			vendors may be engaged to ensure uninterrupted bandwidth.
11.	Budget Constraints	48	Conduct cost-benefit analysis and justifying the investment. Top level management should be aware about the benefits of cloud adoption.

5.16 Summary of the Focused Group Discussion (FGD)

A number of senior IT professionals (Appendix-3) from Information Technology Department (ITD) of banks participated in the FGD. They gave their opinions regarding CC. Some important issues are summarized in the following box.

Box-8: Summary of the Focused Group Discussion (FGD)

1. Majority of the participants have positive attitudes regarding cloud computing adoption (88%).
2. Most of the participants stated that cloud computing can be cost effective for some services (85%).
3. Many believe that community cloud can be a viable solution for banking sector of Bangladesh (70%). Central bank may take initiative to create one public or community cloud platform for banks and NBFIs.
4. Security is one of the key concerns regarding cloud computing (80%).
5. The retention of employees who have expertise in the field of cloud is also a major concern, as they tend to switch the more when they get better option (65%).
6. Banks will act as an operator if they use Software as Service from the foreign Cloud Service Providers (60%).
7. There may be geopolitical issue when it comes to public cloud (55%).
8. If the banks jointly create a cloud through SDN then renew and extension procedures will be easier (55%).
9. Banking sector has lack of expert human resources in cloud computing (75%).
10. The terms and condition of the cloud are ambiguous and it is difficult to understand without having in-depth understanding of cloud computing (60%).
11. There is no trial and error scope for large size State Owned Commercial Banks, so they need proven business model related to cloud computing (40%).

5.17 Roadmap to Introduce CC in Banks

Cloud adoption strategy may vary from bank to bank due to the size, human resources, capital base and technological capacity. Based on the opinions by the expert IT executives from banks, the research team suggests the following roadmap that may be followed by the banks in three different phases.

Box-9: Roadmap to Introduce CC

1. Awareness Development
2. Convincing the management by putting the visible advantages
3. Aligning the organizational objectives
4. Assessment and Cost Benefit Analysis
5. Planning for Deployment
6. Arrange training for developing skilled workforce
7. Assess security, risk and business impact for every service which is shifting into cloud
8. Choosing the most suitable service delivery model
9. Identifying the right vendor for right service
10. Evaluate the SLA
11. Ensure compliance issues (wait for the guidelines of BB) and make deeds and SLAs carefully
12. Migration to the cloud
13. Configure the services
14. Test the operations
15. Identify the Gaps
16. Optimize, review and make changes
17. Perform UAT and UVT
18. Go for live operation
19. Monitor and evaluate the services continuously
20. Go for immediate mitigations

Phase-1: Low dependency/Non-Critical Services (Email, Storage, CCTV recording, Data Analytics, CRM, Help Desk Management, Incident Management, etc.)

Phase-2: Critical Services (HRMS, Remittance Management, In-House Developed Applications)

Phase-3: Most Critical/Advanced Services (CBS including Database, Card System, I-Banking, MFS, Foreign Exchange Transaction Monitoring etc.)

6.0 Identified Challenges, Recommendations and Conclusion

One, Govt./ Regulatory Restrictions:

A very clear direction is required from the Central Bank and Government to move into cloud adoption. Government may adopt data privacy and security law like GDPR (General Data Protection Regulation) for data security and cross border agreement for data sharing. Government and Central Bank may consider withdrawing restrictions on storing sensitive data in local/international cloud inside/outside Bangladesh with setting up proper control and safeguard of the information with due approval process.

Two, Risk of Cloud Service:

When business applications move to a cloud or a third-party vendor performance starts to depend on service provider as well. The performance of cloud-based systems are linked to the provider's systems also. Service provider must be available when required. The main focus should be given on sustainability and reputation.

Three, Local Setup of International CSPs:

Bangladesh Government may encourage well-known Cloud Platforms like Oracle, AWS, and Microsoft Azure to invest and setup private cloud within our country. This will build trust for the financial organizations that data will be within Bangladesh and in case of any forgery organization can enforce Bangladeshi law. Cloud market player presence in Bangladesh will boost up the cloud computing usages.

Four, Local Cloud Service Development:

It is necessary to establish effective local cloud infrastructure. Data should reside in local clouds of our country to ensure privacy. Bangladesh Bank may take initiatives to develop a community cloud where all banks will participate. Government may review and plan to leverage the service in Bangladesh or plan to setup such for all the Bangladeshi Banks. Government may introduce policy and take long term plan to bring out many local Cloud Service Providers (CSPs) to encourage development of local cloud infrastructure limiting the foreign dependency.

Five, Data Privacy and Security:

The topmost concern in investing in cloud services is security issues. Because data gets stored and processed by a third-party vendor and we cannot see it. Cloud security is different from on premises security; hence we need to ensure security as per cloud security standard. Strong SLA needed containing right to audit, penalty on security breach, arbitration clauses etc. with Cloud Service Providers (CSPs). Bangladesh Government may make legal agreement with the world's leading cloud service providers regarding Data Privacy and Security.

Six, Legal Framework /Data Sovereignty Regulations:

Banks seek legal framework in place for adopting cloud computing. Banks must ensure local and international legal stuffs are aligned in the field of CC to ensure data sovereignty and educate CC users accordingly. Regulatory policy and guidelines is required.

Seven, Expertise and Awareness Development:

With the increasing workload on cloud technologies and continuously improving cloud tools, the management has become difficult. There has been a consistent demand for a trained workforce who can deal with cloud computing tools and services**.** Proper training/workshop/seminar could be may arranged by banks/BIBM/BB on regular basis to get aligned with latest technology of CC.

Eight, Network Infrastructure Development:

Network service providers should improve quality and upgrade nationwide existing network. Availability of high-speed Internet connections with strong stability and lower cost for organizations may be ensured by the government to adopt CC.

Businesses have faced challenges in fully embracing cloud platforms due to regulatory compliance and security concerns. In order to safeguard cloud platforms, providers must prioritize the security of virtualized datacenter resources, maintain user privacy, and uphold data integrity. Financial services institutions are gradually adopting cloud computing technologies,

especially for mobile applications and innovation testing. It is crucial for banks to understand that this shift represents a "business model transformation" aimed at achieving enhanced business agility for future growth. The essential step is for each bank to commence developing a cloud reference architecture that will establish its successful approach.

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Appendices

Appendix-1: Questionnaire

Adoption of Cloud Computing in Banks: Opportunities and Challenges

Respondent Information (HoIT/CTO/CIO)			
Name		Cell Phone No.	
Designation/Rank			
Name of the Bank			
Bank Type	☐ State-owned 1 ☐ Specialized 2 ☐ Private 3 ☐ Foreign 4		

(Please don't change any formatting or numbering of the questionnaire. For questions demanding opinion you may add spaces by entering new lines only.)

Section-A: Awareness of Cloud Computing (CC)						
1.	In which type of programs did you attend regarding CC in last two years (select all that apply)?					
		Meeting	Seminar	Workshop	Vendor Program	Others (Mention)
	Local	☐	☐	☐	☐	☐
	International	☐	☐	☐	☐	☐
2.	How many employees of IT department attended the following programs regarding CC in last two years?					
		Meeting	Seminar	Workshop	Vendor Program	Others (Mention)
	Local					
	International					
3.	Please rate your level of understanding about Cloud Computing? ☐ Very Low 1 ☐ Low 2 ☐ Moderate 3 ☐ Good 4 ☐ Very Good 5					
4.	Please rate the level of understanding of your IT team regarding cloud computing? ☐ Very Low 1 ☐ Low 2 ☐ Moderate 3 ☐ Good 4 ☐ Very Good 5					
5.	Please rate the level of understanding of your top management regarding cloud computing? ☐ Very Low 1 ☐ Low 2 ☐ Moderate 3 ☐ Good 4 ☐ Very Good 5					
6.	Please rate the level of understanding of your board members regarding cloud computing? ☐ Very Low 1 ☐ Low 2 ☐ Moderate 3 ☐ Good 4 ☐ Very Good 5					

7.	Following which options best match with your thoughts regarding CC (Please select all that apply)? ☐ It is a viable technology option 1 ☐ It will contribute positively towards achieving the bank's goal 2 ☐ CC will disrupt future banking industry 3 ☐ It is broadly scalable and will eventually achieve mainstream adoption 4 ☐ It is overhyped 5
	☐ It offers new business opportunities 6 ☐ Cloud Computing reduces IT expenses (e.g., IT devices, IT maintenances, etc.) 7 ☐ It will give more security than existing IT system 8 ☐ Lower Risk than existing IT system 9
8.	What is the relevance of CC in your bank? ☐ Critical- in our top 5 strategic priorities 1 ☐ Important, but not in the top 5 strategic priorities 2 ☐ Relevant, but not a strategic priority 3 ☐ Will not be relevant 4 ☐ Unsure/no conclusion 6
Section-B: Current Adoption Status	
9.	Did you adopt any services in the cloud? ☐ Yes 1 ☐ No 0
	If Yes, Which type of cloud did you adopt? ☐ Private 1 ☐ Public 2 ☐ Hybrid 3 ☐ Community 4 ☐ …….. Which service model did you adopt? ☐ IaaS 1 ☐ PaaS 2 ☐ SaaS 3 ☐ BPaaS 4 ☐ …….. Mention the name of the services/jobs/business you have adopted. ☐ …….. ☐ …….. ☐ …….. ☐ …….. ☐ …….. ☐ …….. ☐ ……..

If No,
Please select the factors preventing your bank from using the cloud. (Rank from Highest to Lowest by putting 12,12,11,…3,2,1 as needed)

Factors	Rank
Lack of staff resources or expertise	
Security concerns	
Complexity of moving application to cloud	
Loss of control due to third party management	
Not cheap enough/Budget constraints	
Decreased flexibility: Special customization not possible	
Govt. restrictions	
Legal and regulatory compliance	
Fear of vendor lock-in	
Internet speed	
Data security, loss and leakage risks	
Integration with existing IT environment	

Section-C: Future Plan

10 Does your bank have any plan to go to cloud in next two years? ☐ Yes 1 ☐ No 0

If Yes, mention the services you would like to adopt.

- ☐ Office Automation
- ☐ IT-Services Support
- ☐ Human Resource Management
- ☐ Enterprise Resource Planning
- ☐ Customer Relationship Management
- ☐ Governance
- ☐ Call Center
- ☐ RegTech
- ☐ Risk Analysis and Management
- ☐ Control and Compliance
- ☐ ……
- ☐ ……
- ☐ ……

11	Please mention the name, type and services you would like to get from different cloud service providers?		
	Name of the Cloud	**Type (Private, Public, etc.)**	**Service (PaaS, SaaS, etc.)**
12	How much budget do you have for CC for the next year?		Tk. ……
13	Please select the factors that will drive your bank into adopting cloud computing. □ Resizable capacity of infrastructure □ Third party managing your IT services for you □ Reduced capital cost □ Enhanced Uptime/High availability of IT services and infrastructure □ Rapid deployment of application and IT infrastructure □ Pay only for what you use		
14	At what stage of cloud computing adoption is your bank currently engaged in? □ Awareness Building □ Cost-Benefit Analysis □ Currently evaluating (e.g. in a pilot study) □ Have evaluated, but not plan to adopt this technology □ Have evaluated, and plan to adopt this technology □ Placed in the Board □ None of the alternatives		
Section-D: Security Concern			
15	What are your biggest cloud security concerns? (Rank from Highest to Lowest by putting 11,10,9,…3,2,1 as needed)		
	Factors		**Rank**
	Data loss/leakage		

	Data Privacy/ Confidentiality/ Unauthorized Access	
	Accidental exposure of credentials	
	Visibility and Transparency	
	Incident Response	
	Data sovereignty/ residency/ control	
	Insecure interfaces/APIs	
	External sharing of data	
	Hijacking of accounts, services, or traffic	
	Malicious insiders	
	Foreign state-sponsored cyber attacks	

Section-E: Special Thoughts

16 Please put your valuable opinions regarding the opportunities of cloud computing in Bangladeshi Banks?

17 Please mention the major challenges and probable solutions of Cloud Adoption in Bangladeshi Banks?

Challenges	Solutions

18	Would you like to suggest any roadmap to introduce CC in your bank?	
19	Kindly express your expectation from Bangladesh Government regarding Cloud Computing?	
20	Please write your expectation from the regulator (Bangladesh Bank) regarding Cloud Computing?	

Appendix-2: List of Respondent Banks

Sl. No.	Name of Banks	Sl. No.	Name of Banks
1.	Mercantile Bank Limited	19.	Mutual Trust Bank Limited
2.	EXIM Bank Limited	20.	Bank Asia Limited
3.	Global Islamic Bank Limited	21.	The City Bank Limited
4.	Trust Bank Limited	22.	National Bank Limited
5.	Agrani Bank Limited	23.	Midland Bank Limited
6.	Bangladesh Krishi Bank	24.	Habib Bank Limited
7.	Eastern Bank Limited	25.	Dutch-Bangla Bank Limited
8.	IFIC Bank Limited	26.	The Premier Bank Limited
9.	Padma Bank Limited	27.	Community Bank Bangladesh Limited
10.	Shimanto Bank Limited	28.	Al-Arafah Islami Bank Limited
11.	Bangladesh Development Bank Limited	29.	BASIC Bank
12.	Dhaka Bank Limited	30.	Rajshahi Krishi Unnayan Bank
13.	Islami Bank Bangladesh Limited	31.	First Security Islam Bank Limited
14.	Meghna Bank Limited	32.	UNION Bank Limited
15.	Southeast Bank Limited	33.	Standard Chartered Bank
16.	NRBC Bank Limited	34.	HSBC Bank Bangladesh
17.	Union Commercial Bank Limited	35.	Janata Bank Limited
18.	NCC Bank Limited	36.	One Bank Limited

Appendix-3: List of Participants in FGD

Sl. No.	Name of the Participant	Bank Name
1.	Ahmed Zubyerul Huq	Islamic Bank Bangladesh Limited
2.	B M Zahid Ul Haque	BRAC Bank Limited
3.	Mushfiqur Rahman	HSBC
4.	A K M Ahsan Kabir	Dutch-Bangla Bank Limited
5.	Md Farhad Rahman	HSBC Bank
6.	Mohammed Bakhtiar	Sonali Bank Limited
7.	Md. Abul Kalam Azad	Eatern Bank Limited
8.	Md. Shahinur Rahman	Agrani Bank Limited

As a values-based organization, BRAC Bank invests in building the nation with education and development initiatives that contribute to healthy, sustainable and harmonious economic growth.

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We believe that the book will not only empower the professionals with a better understanding of finance but will also broaden their capabilities and help them contribute more to the country's economic prospects.

Our best wishes to BIBM.

Selim R.F. Hussain
Managing Director & CEO
BRAC Bank Limited

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