Report On
Operations Management in Information Technology Sector of Banking Industry

By

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An internship report submitted to the BRAC Business School in partial fulfillment of the requirements for the degree of
Master of Business Administration

BRAC Business School
BRAC University
June 2024

Declaration

It is hereby declared that

1. The internship report submitted is my/our own original work while completing degree at BRAC University.
2. The report does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The report does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. I/We have acknowledged all main sources of help.

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Fahim Rubyat
ID: 21264044

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Professor, BRAC Business School
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Co- supervisor's Full Name & Signature:

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Assistant Professor, BRAC Business School
BRAC University

Letter of Transmittal

Mohammad Abdul Hoque, PhD
Professor,
BRAC Business School (BBS)
BRAC University
Kha 224, Bir Uttam Rafiqul Islam Avenue, Merul Badda, Dhaka

Subject: Operations Management of Information Technology Division in IFIC Bank PLC

Dear Sir,

This is my pleasure to display my entry level position as an Associate Officer regarding operations management in IT Division of IFIC Bank PLC, where I was appointed following the instruction of the concerned BRAC University authority.

I have attempted my best to finish the report with the essential data and recommended proposition in a significant compact and comprehensive manner as possible.

I trust that the report will meet the standard requirement of the University.

Sincerely yours,

____

Fahim Rubyat
ID: 21264044
BRAC Business School
BRAC University
Date: June 15th, 2024

Non-Disclosure Agreement

This agreement is made and entered into by and between IFIC Bank PLC and the undersigned student at BRAC University…………………………………….

Acknowledgement

I would like to thank my on-site supervisor Sk. Mohammad Ali for his valuable guidance and support. I am deeply grateful to my supervisor, Dr. Mohammad Abdul Haque and my co-supervisor Dr. Md. Arif Hossain Majumder for their invaluable guidance, insightful feedback, and unwavering support. Their expertise and patience have been instrumental in shaping this work.

Executive Summary

Operations management in the Information Technology sector of any organization plays a vital role for the organization's success. Functions like procurement, logistics, inventory management, customer service, distribution etc. are undeniable in an organization's Information Technology sector. Operations management plays a vital role in IFIC Bank PLC. My time in IFIC Bank PLC was a journey of learning and work experience where I got to implement specific operations management functions such as technical evaluation of vendor management, online inventory management, distribution of office 365 product all over the organization network. I worked on key projects like MS Office 365 implementation in the organization where MS Office 365 ensured security, efficiency. During my time in IFIC Bank PLC, I have observed that the bank practices effective operations management in IT Division, which maximize their resources, cut expenses, and improve the caliber of their services. Better client satisfaction and flawless banking operation follows, which are essential in a highly competitive market.

Keywords: procurement; logistics; inventory management; customer service; distribution; implementation; technical evaluation; monitoring; maximize.

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AD	Active Directory
PC	Personal Computer
IT	Information Technology
DNS	Domain Name System
APA	Annual Performance Appraisal
QPA	Quarterly Performance Appraisal
MD	Managing Director
AML	Anti-money Laundering
CFT	Combatting the Financing of Terrorism
ERP	Enterprise Resource Planning
RDBMS	Relational Database Management System

Chapter 1

Overview of Internship

1.1 Student Information

My name is Fahim Rubyat, ID: 21264044. I am enrolled in the MBA program at BRAC University, majoring in Operations and Supply Chain Management.

1.2 Internship Information

1.2.1 Period, Company Name, Department/Division, Address

I have been working at IFIC Bank PLC since November 7, 2021, as an Associate Officer in the Data Processing and IT Management System Division. My current job location is IFIC Tower, 61 Purana Paltan, Dhaka-1000.

1.2.2 Internship Company Supervisor's Information: Name and Position

My internship supervisor at IFIC Bank PLC is Sk. Mohammad Ali, holding the position of Senior Principal Officer and serving as the Administrator of the Domain and Exchange sector.

1.2.3 Job Scope – Job Description/Duties/Responsibilities

The domain and exchange unit handles email platform management including Microsoft Exchange servers. In order to ensure the smooth operation of domain and email services. It is also necessary to create, manage, and troubleshoot email accounts, implement and monitor email security measures like spam filters, encryption, and anti-phishing tools and offer technical support to end users and other IT staff regarding domain and email-related issues. Additionally, regular reports are generated; and close collaboration with other IT teams, vendors, and service providers is required.

1.3 Internship Outcomes

1.3.1 Student's contribution to the company

My contributions to IFIC Bank's IT infrastructure as a domain and exchange administrator are essential to guaranteeing smooth communication, data security, and general system dependability. This position includes a wide range of duties, such as supervising email systems, administering DNS, keeping servers in good working order, and offering end-user support. Making sure all systems, including email servers and domain controllers, are running smoothly and effectively is one of a domain and exchange administrator's essential duties. To avoid disruptions and downtime, this entails routine maintenance, patching and updating the system, and checking its performance on a regular basis. I have maintained continuous business operations, which are essential to IFIC Bank PLC's efficiency, by upholding high system availability. My role's essential component is DNS management. The administrator is in charge of setting up and managing DNS records. An essential component of both internal operations and customer-facing services is the proper management of DNS, which guarantees proper routing of email services and the accessibility of both the internal and the external network resources. One of my main duties was to oversee the company's email infrastructure. To guarantee security and compliance, this entails creating and configuring mailboxes, maintaining distribution lists, and putting email policies into place. In addition, I was in charge of keeping an eye on email traffic, stopping spam, and making sure that email data is backed up and recoverable in the event of data loss. I have worked tirelessly to facilitate efficient communication both with the internal and the external stakeholders by keeping a strong email system. As a domain and exchange co-administrator, security comes first to me. To safeguard the company's information and communication routes, I have helped administer and implement security procedures. This include setting up anti-virus and anti-malware programs, configuring firewalls, and making sure email encryption is enabled. I have also kept an eye out for possible threats, carry out routine security audits, and react quickly to arisen security issues. They guard against cyber-attacks and data breaches by maintaining the IT infrastructure. Another important component of my job was helping end users. When employees have technical difficulties, such as password resets or email access issues, I help them. I have made sure that employees of IFIC Bank PLC can work without technical obstacles by being friendly and responsive, which raises overall productivity and happiness. As a domain and exchange co-administrator, it is essential to the organization's adoption of IT best practices. This include creating and implementing policies for system access, email use, and data preservation. Additionally, I have kept up with the most recent developments in the market and technology, which enabled us to suggest and carry out enhancements that increase system security and performance. As a co-administrator, I have ensured that the IT infrastructure is reliable, scalable, and compliant with industry standards by following the best practices. An organization's IT infrastructure cannot function properly without the contributions of a domain and exchange co-administrator. They are essential in supporting business continuity and growth because they manage DNS and email systems, improve security, assist end users, put best practices into effect, and foster cooperation.

1.3.2 Benefits to the student

I have found the experience of working as a domain and exchange administrator quite fulfilling. It provided a special combination of exposure to real-world problem-solving scenarios, technical skill development, and hands-on expertise with vital IT infrastructure. Being able to work directly with important IT systems is one of the biggest benefits of being a domain and exchange administrator. I have gained hands-on experience configuring, troubleshooting, and managing Microsoft Exchange servers and domain name systems (DNS). This hands-on training is priceless because it gave me a thorough grasp of how these systems work and communicate with one another within the network infrastructure of IFIC Bank PLC. To advance my technical knowledge, I have set up and maintain mailboxes, configure DNS records, and debug email flow and server performance concerns. Being an exchange and domain administrator gave me access to industry standards and best practices which made me knowledgeable about current trends and practices, learned about the newest technologies, software updates, and security standards. Having this knowledge is essential for being competitive in the ever changing IT industry. In order to obtain insight into thorough IT governance and administration, I have taken part in the creation and maintenance of disaster recovery plans, backup solutions, and regulatory compliance monitoring. As a domain and exchange administrator, my work was problem-solving focused. Diagnosing problems with DNS resolution, email delivery, and server speed was a common assignment assigned to me. This calls for both critical and creative thinking, as well as a strong analytical approach. This helped me to improve my problem-solving abilities by taking on technical challenges. Moreover, I have learned how to pinpoint the source of an issue, create workable solutions, and carry them out successfully. These experiences are crucial for building a strong set of analytical skills that may be used in a variety of IT-related fields. There were many opportunities to expand my professional network while working as an administrator of domain and exchange role. Through close collaboration with seasoned IT experts, I learned about their daily tasks, obstacles, and future career options. Through networking, one may be able to make important connections, recommendations, and mentorship possibilities inside the sector. I could better grasp the range of IT job options and how to match their interests and skills with suitable career routes by interacting with experts in a variety of roles. Career chances are greatly enhanced by the knowledge and expertise obtained as a domain and exchange administrator. Employers place a high importance on practical knowledge of troubleshooting, and DNS and Exchange server administration. Proficient employees in these section is frequently seen as excellent prospects for permanent roles in cyber security, network management, or IT support.

Furthermore, my work in IFIC Bank PLC helped my resume stand out by displaying real-world problem-solving capabilities and practical talents, which are highly valued in the tech business. As a domain and exchange administrator as I had to take part in real-world, hands-on assignments that include setting up, maintaining, and troubleshooting Exchange settings, servers, and networks and collaborate closely with cybersecurity experts, system engineers, and network administrators to comprehend the interdependencies in IT infrastructure. This cooperative method helped me to gain a thorough understanding of IT infrastructure is possible. I got a comprehensive understanding of IT operations by learning how various systems and components interact inside a network. Anybody hoping to progress in the IT industry must grasp this concept since it is the basis for more complex positions in IT management and systems administration.

Chapter 2

Organization Overview

2.1 Overview of IFIC Bank PLC

IFIC Bank PLC has been instrumental in promoting economic stability by gaining the public's trust and establishing itself as one of Bangladesh's top commercial banks through the use of digital banking, customer-focused products, and effective risk management. In order to assist the country's commercial and industrial sectors, the Government of Bangladesh and private donors jointly founded IFIC Bank on June 24, 1976. It started off as a non-bank financial organization (NBFI) before getting a banking license from Bangladesh Bank in 1983 and became a full-fledged commercial bank. Through this change, IFIC was able to increase the scope of its offerings and develop a countrywide network of branches. It grew to become Bangladesh's biggest bank by 2023, with 1145 sub-branch locations and 187 main branches.

2.2 Management Practices of IFIC Bank PLC

A strong set of management techniques is used by IFIC Bank PLC, to guarantee operational excellence and long-term growth. The bank places a strong emphasis on taking a client-centric strategy and using technology to improve client satisfaction and service delivery. This involves putting mobile apps and digital banking systems into place so that users may easily access financial services. Upholding a robust framework for risk management is another goal of the bank's management framework. The bank's financial stability is ensured by routinely analyzing credit, market, and operational risks. Transparency and accountability are promoted inside the company by IFIC Bank's adherence to stringent corporate governance and regulatory compliance requirements. By introducing sub-branches staffed with two officers, the bank expanded cost-effectively into rural areas, ensuring long-term profitability.

2.2.1 Centralized Decision Making

At IFIC Bank, decision-making authority is heavily concentrated at the top levels of management. The senior executives, including the MD and board of directors, play a crucial role in formulating strategic decisions, often with extensive consultation with mid-level managers. IFIC Bank PLC management maintains transformational leadership at IFIC Bank. Senior management communicates information to subordinates along with specific requirements and commands. By ensuring that instructions are communicated swiftly and consistently, this hierarchical communication system lowers the possibility of misunderstandings and mistakes. This method pushes employees to continuously improve themselves which guarantees that the bank's objectives are followed consistently and systematically.

2.2.2 Organizational Hierarchy

The senior management committee includes the Board of Trustees, MD, DMDs, and key executives like the Heads of HR, Legal, Compliance, and Operations.

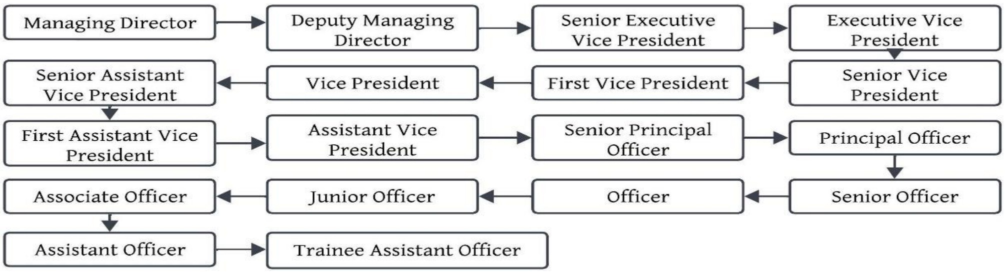

Figure 1. Organization Hierarchy

Division heads report to the DMDs, while branch and junior executives report to their division heads. The bank's structure includes divisions such as Branch Business (overseeing branch operations), AML and CFT (preventing money laundering), HR (employee management), Finance and Accounts (financial calculations and payments), IT (technology management), Retail and SME (loan products), and Treasury (stock market and product rates). These divisions collaborate to meet the bank's targets and provide satisfactory customer services.

2.2.3 Role of Human Resource Management Division

HRM division of IFIC Bank PLC aggressively employed recent graduates as Transaction Service Officers and grew its sub-branch network during COVID-19. The bank effectively provided financial services countrywide, increasing profitability and cutting expenses, with just two staff per sub-branch. Young professionals in Bangladesh were given important employment chances and vital banking skills through this campaign. The Annual Performance Appraisal (APA) method is used by IFIC Bank's HRM section to match employee performance with strategic objectives. Setting quantifiable objectives, keeping an eye on performance, and performing year-end assessments to decide on bonuses, pay raises, and other incentives are all part of this.

2.2.4 Staffing & Selection Process

IFIC Bank PLC solely focuses on merit based recruitment. Applicants go through rigorous process designed by the HRM Division. Four phases are designed for TSO post and five phases for MTO post. These phases are discussed below.

Phase 1: Initial Interview – Primary Selectors from HRM division conducts interview for the applicants and decides who is suitable for the job based on academics and appearance.

Phase 2: Written Test – Selected candidates sit for challenging written examination on English, Bengali, Mathematics and General knowledge.

Phase 3: Computer Proficiency Test – Candidates sit for basic computer skill test on MS Office to show their capability.

Phase 4: Final Interview – After passing the computer test, the candidate face the senior management body for final interview.

After the final interview, senior management decides the organizations future employee.

2.2.5 IFIC Training Institute

As part of IFIC Bank PLC's HRM Division, the IFIC Training Institute offers a wide range of specially designed training courses, the institute fosters continuous professional growth by bringing employees up to date on the most recent banking practices, laws, and technical developments. Among these programs are:

1. **Induction Training:** A thorough induction program covering the bank's rules, history, culture, and operating processes is required of all new hires to ensure a seamless transition into the bank.
2. **Leadership Programs:** Aimed for mid- and senior-level managers, these programs are designed to foster the development of leadership skills, strategy and decision-making aptitude.
3. **Credit Training:** It is an elaborated process where experienced professionals within the bank make sure the employees get to understand banking aspects extensively.

2.2.6 Compensation and Allowance

In order to attract, encourage, and keep exceptional workers, IFIC Bank PLC has a compensation and allowance policy that is in line with both legal requirements and the bank's strategic goals. Some of these compensations are,

1. **Performance-Based Bonuses:** Employees are eligible for performance-based incentives tied up to the overall performance of the bank and Annual Performance Appraisals (APA).
2. **Allowances:** Housing allowances are available for employees in senior roles or those relocating to distant areas. Additionally, medical allowance and conveyance allowance is provided to all employees.

3. **Benefits:** Health and life insurance coverage, gratuity benefits and a provident fund to ensure financial security upon retirement, with contributions from both the bank and the employees.

The goal of IFIC Bank PLC's human resource management (HRM) is to draw in, nurture, and keep a skilled workforce while supporting a continuous improvement culture and the bank's strategic objectives.

2.3 Marketing practices of IFIC Bank PLC

Marketing in banking is crucial for several reasons. It helps banks differentiate themselves in a competitive industry by highlighting unique selling points like better interest rates, innovative digital solutions, or superior customer service. Some marketing strategies that IFIC Bank PLC follows are,

1. **Advertising Campaigns:** Utilizing a mix of digital and traditional advertising channels (print, radio, TV, internet) to reach diverse clientele, with targeted strategies for rural clients, business owners, and millennial.
2. **Promotional Offers:** Introducing exclusive deals and promotions on banking products to attract and retain customers. Collaborative promotions with partners further enhance customer benefits.
3. **Social Media Engagement:** Active presence on popular social media platforms (Instagram, LinkedIn, Facebook, Twitter) to engage customers with informative content, news updates, special offers, client testimonials, and educational posts.

To establish a successful business model, IFIC Bank's management and branding division developed reliable products such as the IFIC Amar Account, IFIC Shohoj Account, IFIC Amar Bari, and IFIC Amar Bhobishawt. Some notable products of IFIC Bank PLC are discussed below.

2.3.1 IFIC Amar Account

A savings account tailored to Bangladesh's varied financial demands is the IFIC Amar Account. All income levels can use it because to its flexible minimum balance requirements and competitive interest rates.

2.3.2 IFIC Shohoz Account

The IFIC Shohoz Account is intended for low-income people and those living below the poverty line. It only costs 10 Tk to open. Account holders promote financial literacy and awareness in rural communities while benefiting them from digital payment systems, mobile banking, and internet banking services.

2.4 Financial Performance of IFIC Bank PLC

In order to find out IFIC Bank PLC financial performance we have measure financial ratios such as Liquidity ratio, Asset management ratio, Debt management ratio, Leverage ratio, Profitability ratio and Market ratio. With these following ratios, we can identify the organizations financial performance. Income statement of IFIC Bank PLC. For the period 31st December, 2020 - 31st December, 2022 is presented in Table 1.

Income Statement of IFIC Bank PLC
(31st December, 2020 - 31st December, 2022)

Particulars	31-Dec-22	31-Dec-21	31-Dec-20
Interest income	26,293,284,875	22,591,013,320	21,170,256,030
Interest paid on deposits, borrowings etc.	18,194,037,136	15,426,170,206	18,292,521,314
Net interest income	**8,099,247,739**	**7,164,843,114**	**2,877,734,717**
Investment income	3,395,287,838	4,369,456,343	3,501,469,298
Commission, exchange and brokerage	3,857,159,223	2,649,787,975	1,971,399,382
Other operating income	221,326,883	187,755,600	183,919,695
	7,473,773,943	7,206,999,918	5,656,788,375
Total operating income	**15,573,021,682**	**14,371,843,032**	**8,534,523,092**
Salary and allowances	3,624,756,913	3,116,808,269	2,570,695,794
Rent, taxes, insurance, electricity etc.	898,236,041	709,050,031	418,605,546
Legal expenses	21,476,111	18,057,653	10,712,980

Postage, stamp, telecommunication etc.	231,721,873	118,248,961	73,869,808
Stationery, printing, advertisement etc.	511,013,400	386,496,624	358,974,150
Managing Director's salary	25,128,053	22,952,775	20,975,250
Directors' fees	4,257,600	4,346,400	1,892,000
Auditors' fees	4,332,625	4,126,749	3,051,750
Depreciation and repair of bank's assets	1,482,939,906	1,195,691,208	1,070,408,309
Other expenses	1,631,885,209	1,186,286,363	1,046,990,192
Total operating expenses	**8,435,747,730**	**6,762,065,033**	**5,576,175,780**
Operating profit	**7,137,273,952**	**7,609,777,999**	**2,958,347,312**
Share of profit of joint ventures/associates	**58,926,798**	**256,382,220**	**522,479,151**
Profit before provision	**7,196,200,750**	**7,866,160,219**	**3,480,826,463**
Provision for loans, investments & other assets			
Provision for loans and advance	2,151,328,796	2,684,664,610	1,498,673,893
Provision for diminution in value of investments	15,953,403	4,002,860	-300,613,649
Other provisions	49,464,436	13,957,367	35,971,496
Total provision	**2,216,746,635**	**2,702,624,837**	**1,234,031,740**
Profit/(Loss) before taxes	**4,979,454,114**	**5,163,535,382**	**2,246,794,722**
Provision for taxation			
Current tax	2,835,201,785	2,712,105,506	975,923,486
Deferred tax expense/(income)	-1,298,112,746	-89,790,868	137,874,939
	1,537,089,039	2,622,314,639	1,113,798,425
Net profit after taxation	**3,442,365,075**	**2,541,220,743**	**1,132,996,297**
Net profit after tax attributable to:			
Equity holders of the Bank	3,442,364,036	2,541,217,648	1,132,996,161
Non-controlling interest	1,039	3,095	136
	3,442,365,075	2,541,220,743	1,132,996,297
Profit available for appropriation:			
Retained earnings brought forward from previous year	5,060,974,278	4,242,454,452	4,920,565,744
Add: Net profit after tax (attributable to equity holders of the Bank)	3,442,364,036	2,541,217,648	1,132,996,161
	8,503,338,314	6,783,672,100	6,053,561,905
Appropriations:			
Statutory reserve	914,340,182	893,008,180	332,872,378
Start-up fund	29,704,190	19,752,712	N/A
Dividend	850,433,780	809,936,930	1,472,612,600
	1,794,478,152	1,722,697,822	1,805,484,978
Retained surplus	**6,708,860,162**	**5,060,974,278**	**4,248,076,927**
Earnings Per Share (EPS)	**1.93**	**1.42**	**0.67**

Table 1. Income Statement of IFIC Bank PLC

Balance sheet of IFIC Bank PLC. For the period 31st December, 2020 - 31st December, 2022 is presented in Table 2.

Balance Sheet of IFIC Bank PLC
(31st December, 2020 - 31st December, 2022)

	31-Dec-22	31-Dec-21	31-Dec-20
PROPERTY AND ASSETS			
Cash	**31,593,152,205**	**25,065,189,007**	**18,492,529,970**
Cash in hand (including foreign currency)	11,828,999,688	7,205,942,452	4,084,799,668
Balance with Bangladesh Bank and its agent bank(s) (including foreign currency)	19,764,152,517	17,859,246,555	14,407,730,302
Balance with other banks and financial institutions	**8,935,036,091**	**1,028,492,775**	**8,895,390,969**
In Bangladesh	6,964,083,717	303,970,186	7,511,869,424
Outside Bangladesh	1,970,952,374	724,522,589	1,383,521,545
Money at call and on short notice	**690,000,000**	**4,380,000,000**	**2,330,000,000**
Investments	**52,749,089,960**	**55,611,867,850**	**52,722,425,471**
Government securities	44,618,830,186	48,724,679,719	46,979,431,855
Other investments	8,130,259,774	6,887,188,131	5,742,993,616
Loans and advances	**354,454,273,864**	**305,061,349,869**	**260,650,289,525**
Loans, cash credit, overdrafts etc.	331,471,884,106	286,490,180,371	246,004,105,427
Bills purchased and discounted	22,982,389,758	18,571,169,498	14,646,184,098
Fixed assets including premises, furniture and fixtures	**9,266,829,299**	**7,922,878,221**	**7,495,172,120**
Other assets	**7,435,856,771**	**6,659,256,586**	**5,834,844,305**
Non-banking assets	**148,474,800**	**148,474,800**	**373,474,800**
Total assets	**465,272,712,989**	**405,877,509,108**	**356,794,127,160**
LIABILITIES AND CAPITAL			
Liabilities			
Borrowing from other banks, financial Institutions and agents	**20,621,060,373**	**14,562,035,508**	**13,021,794,012**
Subordinated debt	**10,700,000,000**	**6,400,000,000**	**2,100,000,000**
Deposits and other accounts	**375,584,475,522**	**333,142,132,175**	**296,369,024,858**
Current deposit and other accounts	148,611,910,560	124,658,938,392	92,715,704,209
Bills payable	2,457,173,551	2,455,215,075	2,547,263,402

Savings bank deposits	24,846,308,549	25,716,666,242	25,343,706,980
Fixed deposits	199,669,082,862	180,311,312,466	175,762,350,267
Other liabilities	**28,276,501,168**	**24,652,417,404**	**20,105,358,060**
Total liabilities	**435,182,037,063**	**378,756,585,087**	**331,596,176,930**
Capital/Shareholders' equity			
Paid up capital	17,859,109,390	17,008,675,610	16,198,738,680
Statutory reserve	8,637,619,318	7,757,784,033	6,864,775,853
General reserve	155,071,397	155,071,397	155,071,397
Revaluation reserve against securities	109,963,943	80,926,888	107,849,126
Revaluation reserve against fixed assets	96,309,954	96,309,954	96,309,954
Surplus in profit and loss account	3,232,601,924	2,022,156,139	1,775,205,220
Total shareholders' equity	**30,090,675,926**	**27,120,924,021**	**25,197,950,230**
Total liabilities and shareholders' equity	**465,272,712,989**	**405,877,509,108**	**356,794,127,160**

Table 2. Balance Sheet (2020-2022) of IFIC Bank PLC

Based on above information we will try to measure IFIC Bank PLC financial ratios in order to specify their financial practices and performances.

2.4.1 Liquidity Ratio

A financial indicator called a liquidity ratio is used to assess how well a firm can use its current assets to pay down its short-term debt. Several key liquidity ratios are Current ratio, Cash ratio, Quick ratio and Net working capital. However, we will also discuss other liquidity ratios, with a focus on IFIC Bank PLC as well.

2.4.1.1 Current Ratio

The current ratio helps stakeholders understand if the company can pay off its short-term debts with its short-term assets, which is a fundamental aspect of financial health. The following formula is used to calculate IFIC Bank PLC's current ratio. Current ratio = $\frac{Current\ Asset}{Current\ Liability}$

The current ratios for three periods are shown in Table 3.

Year	31 Dec, 2022	31 Dec, 2021	31 Dec, 2020
Current Ratio	**1.131790224 > 1**	**1.124941648 > 1**	**1.108923132 > 1**

Table 3. Current Ratio

IFIC Bank PLC has current ratio for the last 3 years greater than 1 that says currently more asset than liability and capable enough to pay its short term debt with its current assets. The increase in asset values versus time is shown in Figure 2.

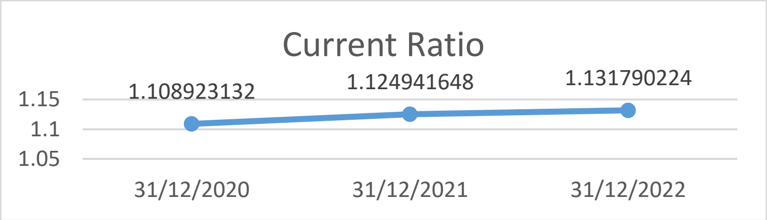

Figure 2. Current Ratio Trend

The Figure 2 shows the increasing trend in current ratio, which clearly highlights the increase from 1.11 in 2020 to 1.13 in 2022. This means that the company is in a slightly better position in terms of liquidity.

2.4.1.2 Cash Ratio

A financial ratio called the cash ratio assesses how well a business can settle its short-term debts with just its cash and cash equivalents, which are its most liquid assets. The following formula is used to calculate IFIC Bank PLC's cash ratio.

$$\text{Cash ratio} = \frac{Cash + Cash\ Equivalents}{Current\ Liabilities}$$

The cash ratios for three periods are shown in Table 4.

Year	31 Dec, 2022	31 Dec, 2021	31 Dec, 2020
Cash Ratio	**0.104032338 < 1**	**0.087642555 < 1**	**0.096053015 < 1**

Table 4. Cash Ratio

IFIC Bank PLC has cash ratio less than 1 in last 3 years. Which means it does not have enough cash and cash equivalents to pay off its short term debt. From the below trend, 0.096 in 2020, 0.088 in 2021 and 0.104 in 2022. Which means the organization depends on other current assets and if situation arises the organization could face liquidity crisis.

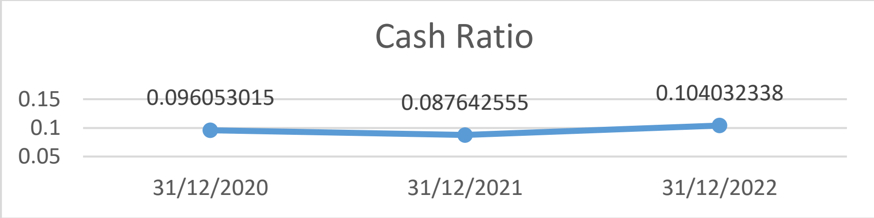

Figure 3. Cash Ratio Trend

2.4.1.3 Net Working Capital

Net working capital (NWC) is the difference between current assets and current liabilities. A firm with positive net working capital is better positioned to meet its short-term obligations and carry on with business as usual since it has more short-term assets than short-term liabilities. The following formula is used to calculate IFIC Bank PLC's NWC is,

Net Working Capital = Current Assets - Current Liabilities

The Net Working Capital for three periods are shown in Table 5.

Year	31 Dec, 2022	31 Dec, 2021	31 Dec, 2020
Net Working Capital	**52,216,016,224**	**43,442,731,818**	**33,699,817,065**

Table 5. Net Working Capital

IFIC Bank PLC's NWC grew gradually from year 2020 to 2023. From 33,699,817,065 in year 2020 to 52,216,016,224 in year 2022 suggests that the organization have more current assets relative to its current liabilities. In Figure 4 below the trend of the line highlights the growth of NWC of IFIC Bank PLC implying strong liquidity.

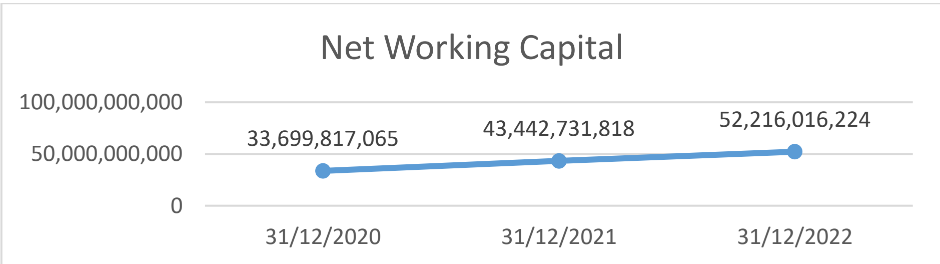

Figure 4. Net Working Capital Trend

Above trend shows the continuous growth of net working capital of IFIC Bank PLC.

2.4.2 Asset Management Ratio

Asset Management Ratio evaluate the efficiency with which a business generates income from its assets. These ratios give information on how well it utilizes its resources to maximize profitability and performance.

2.4.2.1 Efficiency ratio

Efficiency ratios, sometimes referred to as activity ratios, show how well a business uses its resources and runs its business. The following formula is used to calculate IFIC Bank PLC's efficiency ratio.

$$\text{Efficiency ratio} = \frac{Operating\ Expense}{Total\ Revenue}$$

The efficiency ratios for three periods are shown in Table 6.

Year	31 Dec, 2022	31 Dec, 2021	31 Dec, 2020
Efficiency ratio	**0.54 < 1**	**0.47 < 1**	**0.65 < 1**

Table 6. Efficiency Ratio

Efficiency ratio for last 3 consecutive year for IFIC Bank PLC is less than 1. Which indicates that the bank is using its resources efficiently, meaning it incurs less in non-interest expenses for each unit of revenue it generates and the bank's operating expenses are well-controlled relative to its revenue. The trend of the efficiency ratio is shown in Figure 5 below.

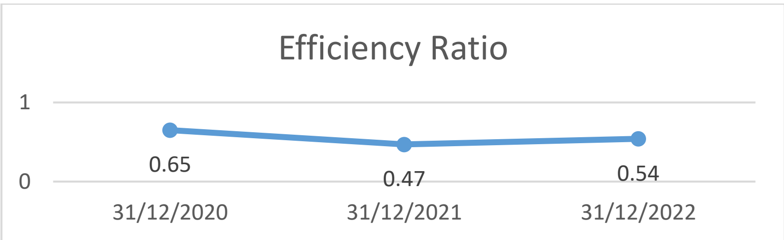

Figure 5. Efficiency Ratio Trend

From Figure 5 we can see that in 2020, the bank had high efficiency ratio and in 2022 the bank had lower efficiency ratio. As the efficiency ratio in all the years are less than 1, these results are in the bank's favor.

2.4.2.2 Loan to Deposit ratio

The loan-to-deposit ratio (LDR) is a financial metric used to assess a bank's liquidity by comparing its total loans to its total deposits. The following formula is used to calculate IFIC Bank PLC’s Loan to Deposit ratio.

$$\text{Loan to Deposit ratio} = \frac{Total\ Loans}{Total\ Deposits}$$

The loan to deposit ratios for three consecutive years are shown in Table 7 and the ratio trend is depicted in Figure 6.

Year	31 Dec, 2022	31 Dec, 2021	31 Dec, 2020
Loan to Deposit ratio	**0.888 > 0.80**	**0.866 > 0.80**	**0.837 > 0.80**

Table 7. Loan to Deposit Ratio

More than 80-90% is considered as high LDR ratio. Which means the bank is lending a large portion of its deposits, which can lead to higher profitability through interest income.

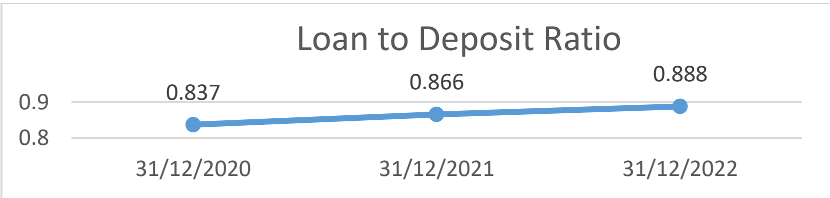

Figure 6. Loan to Deposit Ratio Trend

The trend of LDR line shows gradual increase over the year, which proves that the bank is increasing its loan portfolio relative to deposit.

2.4.3 Debt Management Ratio

Debt management ratios, are financial measurements of a company's capacity for efficient debt management and shed light on the capital structure and ability of the business to repay debt. Some key Debt management ratios are Debt ratio, Debt-Equity ratio and Equity Asset ratio. I am going to discuss these below.

2.4.3.1 Debt Ratio

The debt ratio is a financial metric that measures the proportion of a company's assets financed by debt. The following formula is used to calculate IFIC Bank PLC's Debt Ratio

$$\text{Debt Ratio} = \frac{Total\ Debt}{Total\ Assets}$$

This debt ratios for three consecutive years are shown in Table 8 and the trend in the debt ratio is highlighted by a line chart in Figure 7.

Year	31 Dec, 2022	31 Dec, 2021	31 Dec, 2020
Debt ratio	**0.502 > 0.80**	**0.502 > 0.80**	**0.542 > 0.80**

Table 8. Debt Ratio

A debt ratio of 0.5 indicates a moderate level of debt compared to the company's assets, a balanced capital structure with moderate portion funded by debt.

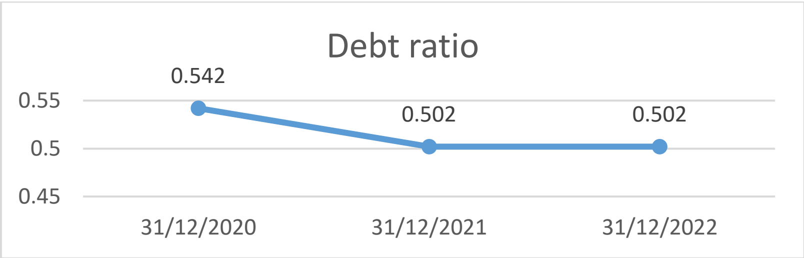

Figure 7. Debt Ratio Trend

The line chart in Figure 7 shows the decreasing trend debt ratio, which indicates that IFIC Bank PLC has reduced its reliance on debt financing relative to its total assets thereby lowering the proportion of assets funded by debt.

2.4.3.2 Debt-Equity Ratio

The debt-to-equity ratio (D/E ratio) is a financial metric used to assess a company's financial leverage and risk exposure by comparing its total debt to its shareholders' equity. The formula to calculate the debt-to-equity ratio is as follows:

$$\text{Debt-Equity ratio} = \frac{\text{Total Liabilities}}{\text{Total Shareholder Equity}}$$

The debt-equity ratios for three consecutive years are shown in Table 9.

Year	31 Dec, 2022	31 Dec, 2021	31 Dec, 2020
Debt-Equity ratio	**14.52**	**14.02**	**13.23**

Table 9. Debt-Equity Ratio

A debt-to-equity ratio of 14.52 indicates that the company has substantially more debt relative to its shareholders' equity. While high leverage can magnify returns for shareholders, it also amplifies volatility in earnings and share prices. The Debt-Equity ratio trend is shown in Figure 8.

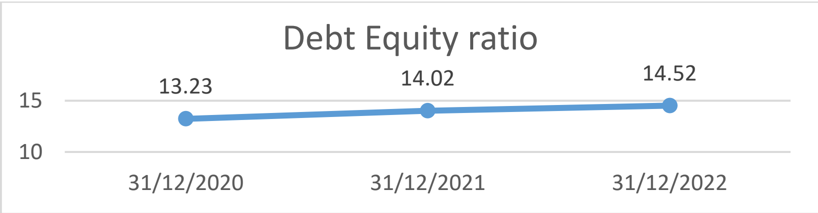

Figure 8. Debt-Equity Trend

From the above trend we can see that debt equity ratio 13.23 in 2020 increased to 14.52 in 2022 indicating the bank is relying more on debt financing rather than equity financing. The bank relies heavily on debt to finance its operations, investments, or expansion activities.

2.4.3.3 Equity Asset Ratio

The Equity Asset Ratio is a financial metric that measures the proportion of a company's total assets financed by shareholders' equity. It provides insight on equity financing to support its assets and operations. The formula to calculate the equity asset ratio is given as follows:

$$\text{Equity Asset Ratio} = \frac{Total\ Equity}{Total\ Assets}$$

The equity asset ratios for three consecutive years are shown in Table 10.

Year	31 Dec, 2022	31 Dec, 2021	31 Dec, 2020
Equity Asset Ratio	**0.065**	**0.067**	**0.071**

Table 10. Equity Asset Ratio

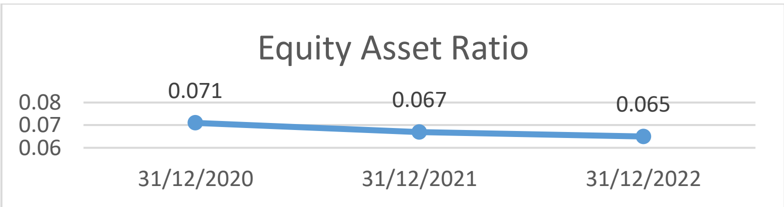

Figure 9. Equity Asset Trend

The Equity Asset ratio trend is shown in Figure 9. We can see that ratio below 0.5 indicates that a vast majority of the company's assets are financed by sources other than equity. This suggests a capital structure heavily skewed towards debt or other forms of financing.

2.4.4 Market Ratio

Market ratios, also known as market valuation ratios, are financial metrics used by investors and analysts to evaluate the market value of a company's stock relative to various factors such as earnings, sales, book value, and cash flow. One of the key market ratio is Price to Earnings Ratio (P/E ratio).

2.4.4.1 Price to Earnings Ratio

P/E ratio compares a company's stock price to its earnings per share (EPS). It indicates how investors are willing to pay for each dollar of earnings generated by the company. The following formula is used to calculate IFIC Bank PLC’s P/E ratio.

$$\text{P/E ratio} = \frac{Current\ stock\ price}{Earnings\ per\ share\ (EPS)}$$

The P/E ratios for three consecutive years are shown in Table 11.

Year	31 Dec, 2022	31 Dec, 2021	31 Dec, 2020
P/E Ratio	**6.062**	**9.648**	**16.119**

Table 11. P/E Ratio

P/E ratio of 6.062 suggests that the stock may be undervalued relative to its earnings, as investors are paying a relatively low price for each unit of earnings. On the other hand, 16.119 is increased which is more expensive relative to its earnings which could be an overvaluation. The P/E ratio trend is shown in Figure 10.

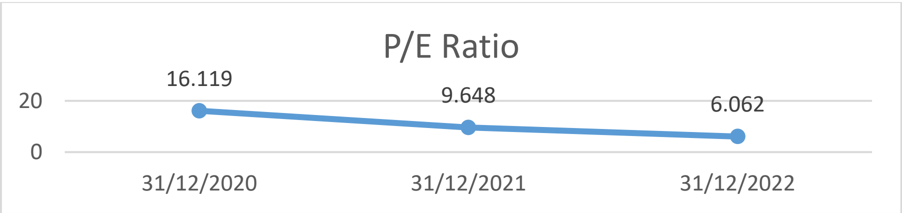

Figure 10. P/E Ratio Trend

Above trend shows 16.119 in 2020 to 6.062 in 2022 decreasing P/E ratio which indicates that either bank's earning has increased or company's stock price has decreased.

2.4.5 Profitability Ratio

A profitability ratio is used to evaluate how profitable a business is in relation to its equity, assets and sales. Key profitability ratio for banking sector is Return on Asset (ROA), Return on Equity (ROE) and Cost to Income ratio.

2.4.5.1 Return on Asset (ROA)

A company's capacity to make money off of its assets is determined by its return on assets (ROA), which provides important information about both its operational and financial performance. The formula to calculate the ROA is given as, $\text{ROA} = \frac{Net\ Income}{Assets}\ X\ 100\%$

The ROA for three consecutive years are shown in Table 12.

Year	31 Dec, 2022	31 Dec, 2021	31 Dec, 2020
ROA	**0.7398**	**0.6261**	**0.3175**

Table 12. Return on Asset

For each dollar of assets, the Bank earned a return of 0.3175 cents. The ROA rises to 0.6261% in 2021 and 0.7398% in 2022. Even if this is still less than 1% but more efficient from 2021 meaning company's capacity to turn its assets into net income has improved and this gain indicates that asset utilization efficiency is still improving. The ROA trend is shown in Figure 11.

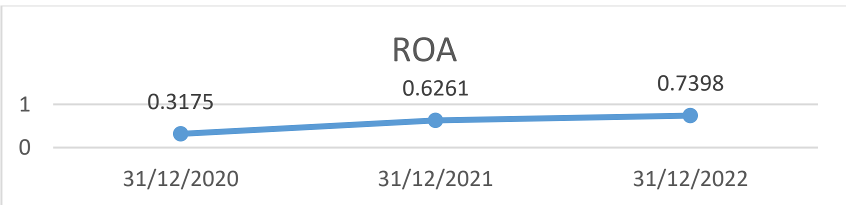

Figure 11. ROA Trend

The above trend shows ROA increased from 0.3175 in 2020 to 0.7398 in 2022 gradually. The increase indicates improvement in asset efficiency and profitability.

2.4.5.2 Return on Equity (ROE)

ROE provides insight into how effectively a company is using the funds invested by its shareholders to generate earnings. The formula to calculate the ROE of IFIC Bank PLC is given

$$\text{ROE} = \frac{Net\ Income}{Equity}\ X\ 100\%$$

The ROE ratios for three consecutive years are shown in Table 13.

Year	31 Dec, 2022	31 Dec, 2021	31 Dec, 2020
ROE	**11.44**	**9.37**	**4.49**

Table 13. Return on Equity

The business made a return on equity of about 4.50% in 2020, nearly doubles to about 9.37% in 2021 and 11.44% in 2022. This noteworthy rise suggests that the business has improved its ability to turn equity investments into profits. The ROE trend is shown in Figure 12.

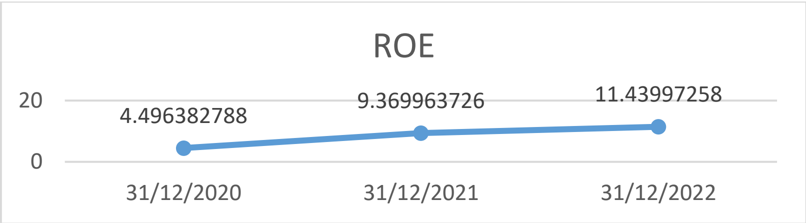

Figure 12. ROE Trend

The above trend shows ROE increased from 4.496 in 2020 to 11.44 in 2022. This increase proves that the bank has become more efficient at using shareholder's equity to generate profits. It suggest strong financial performance.

2.4.5.3 Cost to Income ratio

This ratio sheds light on how well a bank is handling its costs in relation to its revenue. Higher efficiency is shown by a lower cost-to-income ratio since the bank is using less resources to produce each unit of income. The formula to calculate the Cost to Income ratio of IFIC Bank PLC is given as,

$$\text{Cost to Income ratio} = \frac{Net\ Income}{Equity}\ X\ 100\%$$

The cost to income ratios for three consecutive years are shown in Table 14.

Year	31 Dec, 2022	31 Dec, 2021	31 Dec, 2020
Cost to Income ratio	**54.17%**	**47.05%**	**65.34%**

Table 14. Cost to Income Ratio

Operational costs for the bank took up 65.34% in 2020, 47.05%.in 2021 and 54.17% in 2022. This substantial reduction indicates improved operational efficiency. This implies the bank remains more efficient than 2020, though not as efficient as 2021. The cost to income trend is shown in Figure 13.

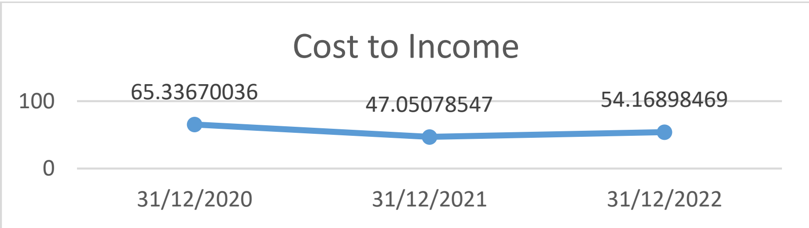

Figure 13. Cost to Income Trend

We can see from the trend that year 2020 has highest cost income ratio while year 2022 has lower ratio compared to year 2020. Which proves the point that the bank remains more efficient than in the first year, though not as efficient as in the second year.

IFIC Bank maintains a steady net profit margin through strong cost control and revenue generation, supported by high-quality lending and prudent risk management. Key financial metrics such as Return on Equity (ROE) and Return on Assets (ROA) show high performance compared to industry averages. The bank's capital adequacy ratio remains well above regulatory requirements, ensuring financial stability and growth potential. Overall, IFIC Bank's financial profile underscores its strong market position, stable financial health, and strategic initiatives for long-term growth and profitability.

2.5 Operations Management and Information System of IFIC Bank PLC

Operations management is crucial for banks' efficient functioning and success. It oversees processes, equipment, and resources to deliver financial services effectively, ensuring exceptional customer service by responding to demands promptly and accurately. This fosters customer satisfaction, brand loyalty, and attracts new business. Efficient operations management maximizes revenue and minimizes costs by streamlining processes, eliminating redundancies, and automating tasks. It also helps control operational risks, such as fraud, transaction errors, cyber security, noncompliance, and technical issues, through robust risk management procedures. Operations management aligns banking activities with strategic goals, converting them into actionable plans and performance measures.

2.5.1 Data Collection, Storing and Maintaining from Different Aspects

Data collection and storing for further use is one of the most important task of a bank. Bank later uses these information for the customers' benefit and for own safety and security. Some Methods of Data Collection is given below,

1. **Customer Onboarding:** Data is collected during the customer onboarding process through forms (both physical and digital) which include personal information, financial details, and identification documents.
2. **Transactions:** Data from daily banking transactions such as deposits, withdrawals, fund transfers, and payments. Customer's transaction history is very important to keep as it relates to various security issues.

To store these data, we have efficient database with high capability. When someone needs to access these information, given the authorization employees will access through internal software and systems to access the database.

2.5.2 Use of Database

IFIC Bank PLC utilizes a Relational Database Management System (RDBMS) to manage its daily operations, storing data in structured tables with rows and columns. SQL is used to query and manipulate this data, while indexes enable faster data retrieval. The RDBMS supports various functions, especially in the digital banking system, which requires large-scale storage and scalability. Unique identifiers like account numbers, customer IDs, and employee IDs link are essential information across databases. The bank also employs ERP (Enterprise Resource Planning) software for comprehensive management, integrating functions like procurement, inventory, finance, and HR. The IT division uses the ERP module for hardware and software requisitions and inventory management, utilizing product serial numbers and models as key identifiers. This system allows IFIC Bank to efficiently manage operations, enhancing competitiveness and stakeholder confidence in the rapidly evolving banking industry.

2.6 Industry and Competitive Analysis

Industry and competitive analysis for IFIC Bank PLC is to understand market trends, identify opportunities, assess threats, and improve strategic decision-making. Its strong financial standing, customer-centric approach, and strategic initiatives give IFIC Bank a significant competitive edge in Bangladesh banking market. Further discussions on industry competitiveness will include Porter analysis and SWOT analysis.

2.6.1 Porter Analysis

Michael E. Porter created the Porter's five factors model, a framework for examining the competitive factors that influence every industry and assist in identifying its advantages and disadvantages. It is an essential tool for figuring out how competitive an industry is and how profitable it may be. Here's how it applies to IFIC Bank PLC:

1. **Threat of New Entrants:** Moderate
   - **Barriers to Entry:** Regulatory requirements, significant capital investment, and established customer trust create barriers.
   - **Potential New Entrants**: Fintech and new banks entering could increase competition.
2. **Bargaining Power of Suppliers:** Low
   - **Supplier Concentration:** There are multiple technology and service providers, reducing individual supplier power.

- **Switching Costs:** Moderate, as switching IT infrastructure or regulatory compliance systems can be costly and complex.

3. **Bargaining Power of Buyers:** High
   - **Customer Sensitivity:** Customers are highly sensitive to interest rates, service charges, and customer service quality.
   - **Availability of Alternatives:** Numerous banks and financial institutions offer similar services, increasing customer bargaining power.
4. **Threat of Substitutes:** Moderate to High
   - **Substitute Products:** Fintech solutions like mobile banking apps, peer-to-peer lending, and digital wallets provide alternatives.
   - **Switching Costs:** Generally low for customers to switch to fintech solutions, making this threat significant.
5. **Industry Rivalry:** High
   - **Number of Competitors:** Numerous banks and financial institutions compete in the Bangladesh banking sector.
   - **Market Growth:** Moderate growth, leading to intense competition for market share.

2.6.2 SWOT Analysis

SWOT analysis is a strategic planning tool used to identify and understand the internal and external factors that can impact an organization's success. It stands for Strengths, Weaknesses, Opportunities, and Threats. We will discuss SWOT Analysis of IFIC Bank PLC below,

1. **Strengths**
   - **Wide Branch Network:** Extensive reach across urban and rural areas.
   - **Product Range:** Comprehensive suite of financial products and services.
2. **Weaknesses**

- **Dependency on Traditional Banking:** Slow adaptation to digital-only services compared to fintech competitors.
- **Limited International Presence:** Focused primarily on the domestic market with limited global outreach.

3. **Opportunities**

- **Digital Transformation:** Expanding digital banking services to capture the tech-savvy demographic.
- **Rural Market Penetration:** Further expansion into underbanked rural areas.

4. **Threats**

- **Economic Instability:** Economic downturns could increase default rates and reduce profitability.
- **Intense Competition:** Increased competition from both traditional banks and new fintech entrants.

2.6.3 Competitive Advantage

1. Distinctive Competence: A competitive advantage that is hard for new competitors or international banks to swiftly imitate is provided by IFIC Bank's extensive local market knowledge and solid government ties. The bank can efficiently handle regulatory changes and customize its services to fit the unique demands of Bangladeshi consumers because of its local understanding.

2. Imitable Strengths and Sustainable Advantage: Although competitors can copy technology and service quality, IFIC Bank has positioned itself well in the competitive landscape due to wide branch network and well-established brand reputation.

2.7 Summary and Conclusions

The banking sector, including IFIC Bank PLC, is crucial to the economic growth of Bangladesh and its development. IFIC Bank PLC acts as an intermediary between savers and investors, channeling funds into profitable ventures, thereby stimulating economic activity. The bank supports capital formation by providing credit and loans to various sectors, leading to infrastructure development, job creation, and overall economic growth. IFIC Bank PLC has significantly advanced financial inclusion by extending services to unbanked or under-banked populations through microfinance, rural branch expansion, and mobile banking technologies, empowering more people economically and socially.

2.8 Recommendations

To increase foreign direct investment (FDI) in banking, IFIC Bank PLC needs to strengthen its regulatory framework to ensure transparency and efficiency. The banking sector also facilitates international trade and investment through services like trade finance and foreign currency transactions, helping address the country's dollar crisis. Enhancing corporate governance, improving financial inclusion, investing in digital infrastructure, and strengthening risk management are essential. Promoting investment opportunities through targeted outreach and collaborating with strategic partners, such as multinational banks and tech companies, can also boost investor’s confidence.

Chapter 3

Project Part

3.1 Introduction

Information Technology division of IFIC Bank PLC requires efficient supply chain management (SCM) and operations managements (OM), which nurtures customer satisfaction, control costs, and boost competitiveness. Workflows are streamlined, operations are made simpler, and utilization of resources are optimized by integrating SCM and OM. OM is the management of processes that transform resources into goods or services. SCM controls the movement of resources, information, and money to guarantee the prompt and high-quality supply of services, software, and hardware. The goal of my project is to increase compliance with central bank regulations, creating an efficient and productive environment for the employees and preventing any outside attacks through mail at IFIC Bank PLC by integrating Microsoft Office 365. Some key features of MS Office 365 are,

1. Real-time Collaboration: With applications like Word, Excel, and PowerPoint, multiple users can work on the same document simultaneously, enhancing teamwork and reducing version control issues.

2. Regular Updates: As a subscription-based service, Office 365 provides regular updates and new features, ensuring that users always have access to the latest tools and security enhancements.

3. Security and Compliance: Office 365 offers robust security features, including advanced threat protection, data loss prevention, and compliance tools to help organizations meet regulatory requirements.

In order to understand my internship work, first one must understand two systems I worked with. One is Microsoft Active Directory and other is Microsoft Exchange. For clear understanding, I am going to discuss the operational functionality of Active Directory and MS Exchange and how they work functionally.

1. Active Directory: Active directory is a service used for centralized domain management. It ensures authentications and authorizations of users accessing the organizations' network through domain. It helps us to implement security policies and monitoring to all the devices and users centrally from a source. It also helps us to enforce patch updates and software updates centrally which ensure security and efficiency all over the organization.

2. Microsoft Exchange: Microsoft Exchange Server is a mail server and calendaring server developed by Microsoft. It is primarily used by businesses and organizations to manage their email communications, calendar appointments, tasks, and contacts. Exchange Server provides a centralized platform for handling email, which allows for better management, security, and collaboration within an organization.

3.2 My Role in IFIC Bank PLC

As discussed above, I am working as a Domain and Exchange engineer in IFIC Bank PLC. During my tenure I have learned how an organization works and functions properly on domain and exchange management. At present, I am responsible for many domain and exchange related duties at IFIC Bank PLC. I will discuss my day to day job roles below.

1. Email address creation for new employees: When HR hires new employees in the bank, I get an email from the respective HR employees containing all the necessary information of the newly recruits. Then, I create unique email address based on all the information provided and make sure every information in the email directory is in order. These email addresses plays a pivotal role for the new recruits as it is needed for various banking systems for authentication.

2. Groups and policy of the employees: Employee rotation occurs on daily basis in IFIC Bank PLC. Branch managers, customer service managers and officers generally move from branches to sub-branches every day. Employees with different organization fall under different mail groups and policies. Managers, Customer service managers, officers of the bank have specific groups so that instructions from management level reaches them without any interruptions. I have assigned employees to their respective groups so that business runs smoothly.

3. Transfer posting: As I say, employee rotation continues daily; employees move from tower to branches or sub-branches. Their information needs to be updated daily, as some banking applications will not function properly otherwise. HR have provided me their office orders or selection letters where they are posted and I have updated in the active directory accordingly in order to make their work efficient.

4. Updated information in email: Updated email information is very important for an employee. Updated position, contact info is often needed for other employees and HR executives for various purposes. Such as, if something happens to any branch or sub-branch after office hour then our monitoring team will immediately call the respective employee of the branch or sub-branch for taking appropriate measures. They contact branch or sub-branch employees via email information. So it is quite necessary to update information of the employees.

5. Revoking user access: We currently have approximately 5500 employees in our bank. People resigns all the time. HR division sends me employee resignation approvals and I have disabled their user access from the active directory. Being the largest bank in the country, incidents happen regarding employee. Whenever our credit monitoring unit observes, team identifies any suspicious activity of any employee, they send me user access revoke immediately. Following their request, I disable revoke access of the suspected user so that our HR executives can do further analysis.

6. Domain related issues: Whenever new user login exceeds to a certain number mostly above 15 users are too many user logs in to any PC within the organization network, they often face domain related issues as the domain fails to recognize too many users. Whenever that happens, employees contact me and I check their network configurations. If everything is in order, I remove previous user profiles which is not required anymore and then join the pc again in our domain so that the new user can work smoothly again.

7. WiFi authorization: My role in IFIC Bank PLC largely depends on collaborating with other IT teams to ensure security and efficiency. One of these collaborative work is WiFi authorization with the network team. Network team ensures all the required approvals of the proper authority and send me the instructions on which Wifi group they will be assign to. Following the request, I assign user to their following groups and the user access gets authorized through active directory.

8. Outside office email access: We have restricted employees from using multiple devices to access official emails from outside the organization. However, mobile device malfunctions and upgrades to new phones are daily occurrences in our organization of approximately 5500 employees. In this case the following employee gets approvals from his managers and my division head. After proper approvals, I disable and remove his previous device and then configure his official email to his new device so that he can work without interruptions.

9. Checking phishing mails: Another collaborative work with cyber security team is checking phishing mail on daily basis. Malicious email comes to the organization every day from all over the world. Our cyber security team monitors these attack 24/7. They send me reports containing suspicious activities through email every day and I make sure that none of these mail reached our organization successfully. Policies for phishing and spoof mail protects the organization and whenever any suspicious mail reaches the organization, I block the source accordingly so the attack does not happen again.

10. Troubleshoot email related issues: IFIC Bank PLC is the largest networking bank in the country consisting of more than 5500 employees. My job is to provide support service for any type of email and domain related issues that happens to the employee. Some of these issues are email inaccessibility, mail storage full, email disconnected, specific email configuration, unable to reach mail server etc. Sometimes email profile gets corrupted which could cause in email inaccessibility. So I create a new profile for the user and add his email address to the following profile. Moreover, we have email storage assigned for specific designations. These email storage becomes full over time. So the user contacts me over phone and I help the user to archive his mails and store it in user's computer. Also, bad configurations like network gateway and domain settings can sometimes cause disconnected emails in Outlook. I make sure that email configurations are set properly in user computer for smooth connection.

Above I have discussed all my job roles in details for better understanding. Domain and Exchange plays a crucial role to IFIC Bank PLC. My job is to ensure the domain and exchange unit runs smoothly and efficiently at all costs.

3.3 Pros and Cons of My Work

As the co-administrator, I have managed and maintained active directory and exchange server. I have found these job rewarding and challenging at the same time. My job role has been heavily depended on email communication and authentication of some banking systems. Below, I will discuss pros and cons related to my internship job at this bank.

3.3.1 Advantages

Firstly, experience in maintaining active directory and domain and exchange has become highly sought-after role in many organizations. Any organization that wants a centralized authenticated system and heavily depended on Microsoft products must need experienced domain and exchange professional. I believe my job role has made me an experienced professional for domain and exchange sector of IT industry. Secondly, I ensure security of all communication via email from harmful domains and websites for the organization's infrastructure. It has made me knowledgeable about specific issues and how to handle clients and stakeholders. Thirdly, my gathered experience as a domain and exchange engineer can easily be transferred to other sectors such as finance and healthcare. Additionally, due to the rarity of the role, the compensation is quite satisfactory. Fourthly, my role at IFIC Bank PLC offers continuous growth and extensive learning opportunities in communication within a large organization. Moreover, making the organization adapt to new technologies, implement patches and updates for hardy security and continuous Microsoft offerings has made my job a learning hub. Lastly, Domain and Exchange engineers have significant role for mitigating security threats. During my work period at the organization I have actively ensured the access control and integrity of the communication system. It has made me understood the type of threats and attacks that could harm the organization how to mitigate that risk. Phishing mail attack occurs on a daily basis. Most of the time our firewall and security policy prevents phishing mail to enter our mailing system. However, I have observed that some of these phishing mails are disguised as authentic emails that our security policy is unable to identify. Whenever that happens, I analyze the source IP and country the email was sent from. After confirming the invalidity of the source I block the IP address in the system. Another threat that I have faced users' accessing harmful websites from their mobile phone which could compromise their user id and password. As an example, I have seen organizations' email addresses associated to social media accounts. Social media is full of hackers and traps that could harm the organization largely. Moreover, sometimes dishonest employees make questionable decisions and their user access needs to be revoked immediately. That employee could cause a great deal of loss for the organization and I have to make sure that the employee is completely locked out from the system. These are some of the threats I have faced during my internship work, which are the positive aspects of my job as a domain and exchange engineer.

3.3.2 Disadvantages

My job isn't without any challenges. During my internship period I faced various difficulties and challenging problems. Firstly, I faced mail flow issues. In banking environment, specific unit of the bank sends bulk mail to customers and stakeholders. However, when a bulk mail is sent in office hours, lot of mails gets stored in queue which results in general banking disruptions. Secondly, exchange database corruption leads to significant data loss. We have to make sure of Exchange database backup when such issues arises. Thirdly, improper configurations in exchange servers. Exchange servers can suffer from performance issues due to improper configuration, hardware limitations, or resource constraints. Fourthly, securing organizations from attackers continuously sending phishing mails in order to harm the organization. We have policies and firewalls for such cases but many times attackers makes the attack look like valid email from reliable source. Fifthly, incorrect DNS settings is also an issue. Incorrect DNS settings can cause widespread issues, including login failures, inability to access network resources, or email delivery problems. We have to make sure proper password policy and guidelines are set on active directory for our banking environment. Not to mention, my position as a domain and exchange engineer has put a great deal of responsibility because any setup errors or system outages could have a major effect on the entire company. As my company operates on finances, single downtime could cause great deal of loss. Many times I had to provide on-call support outside business hour due to the demanding nature of the job. Not only troubleshooting mail related problems could become very challenging but also it requires deep technical knowledge and sometimes I have to follow trial and error process which is time consuming. Lastly, continuous learning pressure of new technology and threats are also very challenging because any system malfunction or security breach could harm the organization greatly. These are some of the drawbacks I faced as a domain and exchange engineer.

3.3.3 Quantitative Analysis as a Domain and Exchange Engineer

Based on above pros and cons, I have identified some of the metrics that could be used to properly analyze my work as a Domain and Exchange engineer. Identified metrics are efficiency, quality of work, job satisfaction, career growth, work life balance and demand for the job. Below, I am going to expand on my analysis and show my reasoning with proper examples.

Metrics	Efficiency	Explanation
Efficiency	20 minutes per task	My work is heavily focused on email related troubleshooting. Exchange and security related jobs take more than usual time so that it averages completion time 20 minutes per work.
Quality of work	5% error rate	Troubleshooting email could be complicated. However, some issues are caused due to PC configurations or network security. In that case, user has to send their PC in head office to upgrade OS and patch files. It is measured at 5%

3.3.4 Quantitative Analysis of My Work

For quantitative analysis I have to break down my work and efficiency to Key Performance Indicators (KPI). These KPI will provide an overall analysis of my work in IFIC Bank PLC.

1. Uptime Percentage: It will measure the availability and reliability of our AD and Exchange server. Key factors to consider in this case are total operational time in a month, downtime of the servers and our target for efficiency. From my internship work, I have collected these relevant data to identify the Uptime percentage.

- Operational time in a month = 720 hrs
- Downtime of server = 30 min or 0.5 hrs (After office hour)
- Target for Efficiency = 99.9%

Operational Efficiency = $\frac{Operational\ time\ in\ a\ month - Downtime\ of\ server}{Operational\ time\ in\ a\ month}\ X\ 100\%$

$$= \frac{720\ - 0.5}{720} \text{ X } 100\% = 99.93\%$$

Availability and reliability of our AD and Exchange server is 99.93%.

2. Email Delivery Time: We will analyze average email delivery time from sender to recipient. I have collected some email delivery time from our organization. Our target was 3 seconds for internal email delivery. The delivery times for 15 periods are shown in Table 15.

No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Delivery Time	2.5	1.5	1.8	3	1.3	1.7	2	1.4	1.8	2.5	2.3	1.9	1.6	2.5	2

Table 15. Data on Email delivery time

Average Email Delivery Time = $\frac{29.8}{15}$ = 1.9 sec.

From above we can see that our average Email delivery time is 1.9 sec which maintains our 3 second target.

3. Security Incident Response Time: I am going to analyze my response time for any security incident through email. For this KPI, my target is within 10 minutes. I have collected some security incident response times for this purpose. This response times for 5 periods are shown in Table 16.

No.	1	2	3	4	5
Response time	7 min	10 min	13 min	12 min	6 min

Table 16. Data on Security Incident Response Time

Avg. Response time = $\frac{48}{5}$ = 9.6 minutes.

My response time for any security incident through email is within 10 minutes which maintains organization's standard time of responses.

4. Email Support throughout organization: This KPI is to identify my average email support time for the organization. I have collected data to measure this KPI and my target is within 15 minutes. This email support times for 10 periods are shown in Table 17.

No.	1	2	3	4	5	6	7	8	9	10
Support Time	12 min	15 min	10 min	13 min	10 min	9 min	6 min	10 min	8 min	9 min

Table 17. Data on Email Support Time

Avg. Support Time = $\frac{102}{10}$ = 10.2 minutes.

My average email support time is 10.2 minutes which is within my target 15 minutes to maintain efficiency.

3.4 Office 365 Procurement and Implementation

To increase security and compliance, central bank of Bangladesh initiated updated software use in banking sector. In this regard IFIC Bank PLC started a project to procure and implement Office 365 software with official Microsoft support. The project focuses on two major parts: procurement which is involved in acquiring the software and securing support from vendors along with qualified personnel and its implementation which ensure the proper integration and usage of Office 365 across the organization.

3.4.1 Procurement Procedure

Procurement in a bank, such as IFIC Bank in Bangladesh, generally follows a structured process to ensure transparency, efficiency, and compliance abiding by regulatory standards. Although specific internal procedures might vary, IFIC Bank PLC follows these steps.

1. Identification

a. Requirement Assessment: To comply with the central bank regulation of Bangladesh, my unit brought the issue to the attention of the IT Division of IFIC Bank. We documented our needs for the updated MS Office 365 service.

b. Approval: We presented our findings to our Head of IT and Chief of IT. Then the senior management reviewed our request and acknowledged the need of Office 365 in the organization.

2. Requisition Preparation

a. Requisition Form: After that our Service and Estate Division prepares a purchase requisition form based on our request from IT Division detailing the specifications and quantity of the required items.

b. Budget Check: In the meantime, Finance and Account Division verifies if the requisition aligns with the budget of IT Division as every division gets a primary budget at the beginning of the year.

3. Approval of Requisition

a. Managerial Approval: The prepared requisition is reviewed and approved by the Head of Service and Estate Division.

4. Supplier Identification

a. Vendor Database: The procurement team from Service and Estate Division refers to a list of pre-approved vendors. However, if no suitable vendor is found then the tender is published in newspaper and online sites to identify new suppliers.

5. Request for Proposal (RFP)

a. RFP Preparation: An RFP is a more comprehensive document used to solicit proposals from suppliers for complex projects or services. Vendors prepares their presentation in binders with requirements such as experienced manpower with certification, proper specification, similar work experience in other organizations etc.

b. Distribution: The RFP was sent to selected vendors such as SMART Technologies, Global Brand, Thakral and Corporate Projukti.

6. Bid Evaluation

a. Bid Collection: Bids are collected from vendors within a specified timeframe.

b. Comparison: The procurement team compares the bids based on price, quality, delivery time, and other requirements.

c. Negotiation: Negotiations are conducted with shortlisted vendors to achieve the best terms.

7. Supplier Selection

a. Evaluation Committee: An evaluation committee assesses the bids and selects the most suitable supplier.

b. Approval: Service and Estate division and IT Division select SMART Technologies.

8. Purchase Order (PO) Issuance

a. PO Preparation: A purchase order is prepared detailing the agreed terms by Service and Estate division.

b. Approval: The PO is reviewed and approved by senior management of IFIC Bank PLC.

c. Dispatch: The PO was sent to the SMART Technologies.

9. Delivery and Inspection

a. Receipt of Goods/Services: SMART Technologies delivered the Office 365 license on our online inventory as per the PO.

b. Inspection: I inspected the validity of Office 365 licenses for compliance with the specifications.

c. Acceptance: If I found all the licenses are in order and fully functional for 3 years so I documented the received products and sent to Service and Estate Division for payment clearance.

10. Invoice Processing and Payment

a. Invoice Verification: Afterwards, SMART Technologies submitted an invoice which is verified against the PO and delivery receipt.

b. Approval: The invoice is approved by the Service and Estate division and IT Division.

c. Payment: Payment is processed as per the agreed terms.

11. Record Keeping and Reporting

a. Documentation: All procurement documents are filed for record-keeping.

b. Reporting: Regular reports on procurement activities are generated for management review, PCI-DSS certification and annual audit purposes.

12. Post-Procurement Review

a. Supplier Performance Review: The performance of the supplier is evaluated.

b. Feedback: Feedback is provided to the supplier, and any identified issues are addressed.

3.4.2 Technical Evaluation

It was my responsibility to make sure that all the selected vendors to participate in the tender was evaluated as per the documents they provided to us. For this technical evaluation, I have followed the below criteria,

1. Experience in an associated field in Bangladesh: In our case, IFIC Bank PLC had the requirement of vendors' work experience in Office 365 deployment of 3 continuous years in Bangladesh's banking industry or financial organization.

2. Current client for the last three years in a similar business sector: Provided Office 365 or Microsoft related support in banking industry for the last 3 years.

3. Number of experienced and certified resources relevant to the job: Experienced and licensed resources was one of our most focused criteria. Because, experienced resources will guide us in case of any trouble we face.

4. Vendor Strength: To check the vendor strength, the vendors need to share the audited financial report of last three years. We have to ensure that the vendor does not file for bankruptcy in the middle of the project.

5. Compliance with specification: I had to make sure that the vendors are all agreed to the required products. Not a single specification is mismatched on the given report.

6. Total Commercial Marks: Whoever bids the lowest price, will get the full commercial marks as we can reduce cost. I had to cross check with other organizations for quality of vendor services and vendor response time to support urgently. Vendors also provide certificate of work upon completion from similar organizations which suffices the vendor capability. After successful completion of project tenure, we had to provide service quality and overall performance to procurement department so that the organization clears all the payments.

After this technical evaluation, I sent the report to IT division head and after that, it is sent to the service and estate division for further evaluation. In our case, SMART Technologies met all the requirements and successfully took over the project.

3.4.3 Online Inventory Management

SMART Technologies provided digital license through Microsoft Admin Portal. All license was stored under the administrator user id. Our total licensing was 2000 for Office 365. Online inventory was very beneficial for us because it helped us keep tracking more easily, it did not need physical maintenance and cost us less money. Online license inventory looks similar to the above picture. In our case, we procured 2000 licenses of vendors for 3 years from SMART Technologies. After that, all the functioning Office 365 would be inaccessible for the users.

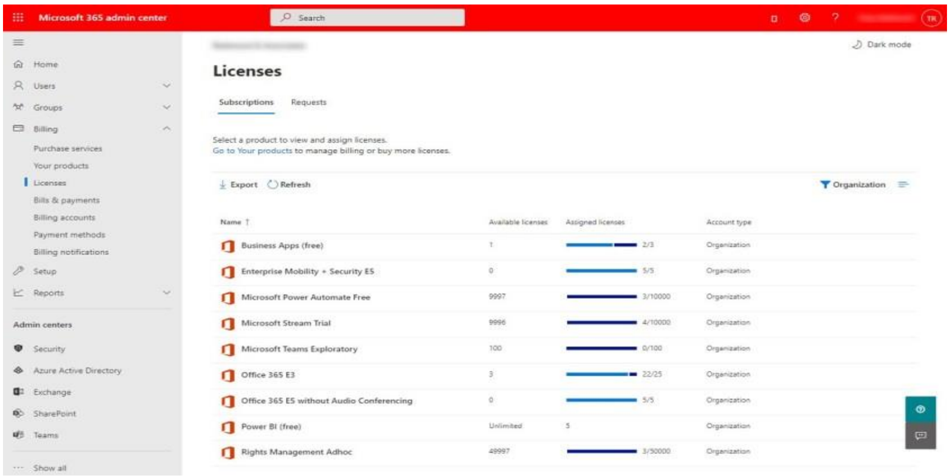

Figure 14. Office 365 Online License Inventory

So I had to make sure that all the big branches get the product first. We started our Office 365 deployment at Dhanmondi, Narayanganj, Gulshan and Kawran Bazar at the beginning. After that, we gradually deployed all 2000 license to all the division in Bangladesh along with the head office.

3.4.4 Challenges I have Faced

I faced a number of obstacles throughout my internship that put my adaptability, problem-solving abilities, and capacity to perform well in a fast-paced workplace to the test. These difficulties included handling intricate technological problems and efficiently allocating time while juggling several projects.

1. Network Issues: Office 365 is heavily depended on the internet. However, internet access could be harmful for regular banking operations as malicious virus could attack. So we had to create and implement proxy internet for specific links that are required to enable Office 365. Also, bandwidth allocation is limited in branches. Office 365 could take majority portion of the bandwidth which could affect general banking operations. So we had to make sure that office 365 does not take majority bandwidth.

2. Employee Placement: IFIC Bank PLC continuously shift employees from branches to uposhakhas on monthly basis. Because of this continuous rotation, I have to change their place of posting and make sure their allotted licenses available to the employee that replaced them. It is very difficult to keep track of hundreds of employee moving to different branches and uposhakhas every week.

3. Sign in Issue: In branches, employee often change their PC for work purposes. However, when they change their PC, they have to login to office 365. Otherwise they cannot work in office products such as word and excel. Every user domain changes computers proxy network configuration which leads to make office 365 inactive. I troubleshoot the user’s proxy network configurations and help them authenticate their license to office 365 product so that the user can work without interruptions.

4. Multiple Mail Users: We have some employees who requires using of multiple mail addresses for official purpose. To access organizational mail we use Outlook software. However, Office 365 only allows one mail address at a time. So, I have to create different email profiles in PC for different email addresses in order to use multiple emails in a single user. So whenever a user tries to access email, they get options to select email profile to complete their tasks.

5. Windows Version: Some of the branches were opened long time ago and far away from head office or metropolitan area. Windows versions all over the world have gotten regular updates but some of the specific branches and uposhakhas PC worked without any updates which is normal in our field of work. However, evolving software and technologies require latest windows version. Utilizing Office 365 on a Windows version that is too old, might lead to security flaws, incompatibilities, and restricted access to the most recent features. So we had to update windows version in the branch which was time consuming and troublesome for the branch employees and customers. Working on a computer at banking hour creates bottleneck of services and shows bad organization practice.

Every challenges during my internship gave me insightful experiences that improved my knowledge of the field and sharpened my professional abilities. I have described the particular difficulties I encountered and the methods I used to get rid of them. These efforts helped me grow as a person and as a professional.

3.5 Recommendations

My recommendation would be prioritizing security in purpose of protecting Active Directory (AD) from unwanted access, putting strong spam and phishing filters in place for Exchange, and efficiently managing group policies and permissions. Then it would be easier to reduce risks and expedite troubleshooting if comprehensive documentation and explicit disaster recovery plans are created and maintained. Engineers must always be in the learning mode, since the technology landscape is always changing. Since I frequently have to collaborate closely with management, end users, and other IT teams, they need also develop good communication and teamwork skills. It helps to align expectations and lower friction when all stakeholders are informed about potential risks, ongoing issues, and planned upgrades. Error risk can be decreased and the environment can be made easier to manage in complex situations by following the best practices for design and execution and simplifying setups when feasible. To get end users and IT personnel used to be with Office 365 tools and functionalities, we have to provide them thorough training. We have kept user password secure at all cost. We must adopt best practices for security, such as frequent security audits, multi-factor authentication, and data loss prevention.

3.6 Conclusions

My internship in the Information Technology (IT) division at IFIC Bank PLC has been a highly enriching experience, providing me with valuable insights into the operations management in IT division. Over the course of my internship, I had the opportunity to engage in various aspects of IT operations, including domain and exchange related support. One of the key projects I worked on was the implementation of Office 365 project allowed me to gain hands-on experience in project management, from initial planning and technical evaluation to testing, deployment and maintaining online inventory. The mentorship and guidance provided by my supervisors and colleagues were instrumental in my learning journey. Their expertise and willingness to share knowledge helped me navigate complex challenges and develop a practical understanding of IT operations management. The skills and knowledge I have acquired will undoubtedly be beneficial as I pursue a career in information technology and operations management. I am grateful for the opportunity provided to me and look forward to applying these experiences in future professional endeavors.

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