

Internship Report on The Business Development Wing at Barikoi Technologies Limited



submitted to

Islamic University of Technology

in partial fulfillment of the requirements for the degree of

BBA in Business and Technology Management (BTM)

Submitted by:

I understand that my final report will become part of the permanent collection of the Islamic University of Technology BBA in Business and Technology Management Program. My signature below authorizes release of my final report to any reader upon request.

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Internship Report On

“The Business Development Wing at
Barikoi Technologies Limited”



This internship report is submitted to the Department of Business and Technology Management (BTM) at the Islamic University of Technology (IUT) for the course BTM 4800.

Letter of Transmittal

18th April 2022

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Board Bazar, Gazipur-1704, Bangladesh.

Subject: Submission of Internship Report on “Barikoi Technologies Limited”.

Dear Sir,

It is a pleasure for me to be able to submit my internship report for the completion of a three-month-long internship program at Barikoi Technologies Limited. I have tried my best to ensure that the report becomes a meaningful and successful one by adding the experience I have gathered during my internship period. This report was a huge chance for me to reflect on the learnings I have gathered on corporate life, working environment, and organizational policy that is associated with the function I was assigned to. In the future, I am very hopeful that I will be able to use the gathered knowledge in my professional career. It was a great pleasure for me to complete this report under your guidance and I would like to share my gratitude for all the assistance and guidance you have provided me in the process. I hope that the mistakes I have made during the preparation of the report will be apologized and I am open to clarifying any part of the report if necessary.

With best regards,

Ashikul Kabir

Student ID: 170061049

Acknowledgment

All thanks to the Almighty Allah (SWT) for providing me with the strength and opportunity to be able to complete the internship program and the report within the due timeline. Even though there have been some complications in producing the internship report, I have been able to overcome these challenges with the guidance of my supervisors and I am thankful to them for all the assistance they have provided me with. I would further like to extend my gratitude to many individuals who had supported me throughout the process both directly and indirectly.

In the beginning, I would like to thank my academic supervisor S M Rakibul Anwar, Assistant Professor, Department of Business & Technology Management for always providing me with insightful feedback which has made it possible for me to complete the report with ease. This report would not have become a meaningful one without the suggestions and feedback he had provided me with from time to time. I have tried my best to make this report flawless with as few mistakes as possible.

In addition, I would like to convey my gratitude to my assigned supervisor of Barikoi Technologies Limited, Md Al Amin Sarker, Managing Director, Barikoi Technologies Limited, who took all the responsibilities of me and provided me with his precious time to share his experiences with me. He furthermore assisted me with different suggestions which would be helpful for me to succeed in my career. As a business student, the learnings I have gathered from the internship program under his guidance have helped me to understand the working culture in a corporate environment and the norms of the organizations.

It was a great experience for me to work with the Barikoi team and I am thankful to all the employees who have helped me during my work tenure and made the experience a valuable one for my future.

Executive Summary

The report is an attempt to summarize the three-month internship program that was aimed to provide me with practical professional experience. The document outlines my experience as an intern at Barikoi Technologies Limited.

Barikoi is a digital mapping start-up of Bangladesh, a local company with multi-category B2B and B2G products and services with the aim of enabling reliable location experience in Bangladesh. In the world of digital mapping industries, Google is the key player in the global market having the technology advantage and location information for the consumers all over the world. Barikoi has come up with the idea of serving the businesses based in Bangladesh with reliable location data where Google is not focusing on.

As an intern of Barikoi I got the opportunity to closely monitor how they operate their businesses. I could observe almost all the activities within the company and communicated with the existing employees for any specific detail. I was able to contribute in some projects undertaken by Barikoi for their piloting program.

This internship enabled me to explore the corporate culture and become a part of it for 3 months. It broadened my experience of working in a corporate environment, which supported not only my professional development but also my personal growth. This has surely had a significant impact on my career plans.

At the beginning of the report, I have given the company overview and industry analysis. After that I described my roles and responsibilities as an intern. Lastly, I have given an analysis at different levels of the company – company level, market level and professional level. Finally, I have given my concluding remarks and recommendations on the scopes of improvement both in Barikoi and our BTM courses.

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Chapter 1

Introduction

1 Introduction

This report is an integral part of the course – Internship 4800 for the 8th semester. This report is written with an aim to share the experiences that I have gathered while working as an intern for 3 months at Barikoi Technologies Limited. This part will contain the purpose of the report, scope, methodology I have used and the limitations I faced while compiling the report.

1.1 The Purpose of the Report

This report is being prepared to introduce the 4th year students of the Business and Technology Management (BTM) department to the job market and the corporate world to gather professional experiences by applying academic knowledge in practice. It is the outcome of my 3-month long internship as a “Business Analyst Intern” at Barikoi. This report includes information on the overview of the company, analysis of the industry of concern, description of the tasks completed during the internship, a thorough analysis of Barikoi’s environment and some concluding remarks.

1.2 Scope of the Work Completed

A reader will be able to get an overview of Barikoi Technologies Limited and its business operations, services offered, working conditions, market size and the overall idea of the industry. It will also deliver some insights about the digital mapping industry as a whole and give an idea about my entire internship experience as well as the learnings obtained during the period.

1.3 Methodology

I gathered all the required information for my internship report from the following two sources:

- **Primary Sources:** The data has been sourced from regular interaction with the existing employees of the company, personal records and chat with the MD of the company.
- **Secondary Sources:** Includes information from the internet, company website, company’s audit report and previous internship reports.

1.4 Limitations

The report contains the following limitations:

- **Confidentiality of data:** I could not include some information of the company since there are some privacy issues associated with the contents of the report.
- **Lack of data sufficiency:** There was a lack of sufficient information on the internet since Barikoi is a startup company and started generating their revenue just from 2020.
- **Time:** Three month is not sufficient for making a complete judgement about an organization as a whole. I could have added more information and gained more insights about Barikoi if I could have stayed a little more at Barikoi to observe their work environment.

Chapter 2

Company Overview

2 Company Overview

I will describe the overview of Barikoi Technologies Limited in this section followed by some frequently asked questions.

2.1 Barikoi Background

Barikoi Technologies Limited started its journey in 2018 with a vision to provide reliable location data for Bangladesh. It collects, formats, organizes location data through mapping urban areas and collaborates with city authorities to do so. Barikoi helps companies to improve their location-based services, automate logistics, enhance the user experience, Verify KYC, Address verification, etc. Additionally, it helps city authorities to increase revenue and city monitoring capability. Barikoi consists of a Business department, an IT department and an Operations department. The Business department includes the management, admin and product team. Barikoi currently offers its services to several renowned B2B platforms of Bangladesh namely The City Bank Limited, HungryNaki, OBhai, Sheba.xyz, Dhaka North City Corporation (DNCC), Ajkerdeal, Kludio, Maya.inc, LandKnock Limited, 10 Minute School, Shikho, TruckLagbe, GoZayaan, Save The Children, Rapido Limited, Now Delivery etc.

2.2 Company Profile



Figure 1 : Company overview of Barikoi

The figure shown above illustrates the overview of Barikoi Technologies Limited as well as their purpose, mission, vision and core value of the business.

2.3 Operating sectors

Barikoi is able to operate and provide several sectors with its offered products and services. The versatility in their creativity makes the experience of their offerings more reliable and effective for the players in those sectors. The sectors the company operates in are described below:

- **Banking and Financial Organizations:** Barikoi has a good amount of current and potential business consumers for this sector. The company introduced a unique service with technological inclusion powered by its digital solution named 'Verify'. This service lets its consumers manage its loan or credit management with ease and saves up a huge amount of time in its management.
- **GovTech (Smart City):** Barikoi deals in the B2G platform as well with their recently launched product named as 'UrbanEngine' that helps the government organizations in dealing with issues such as Holding Tax Collection, Trade License Management effectively. The solution even helps the city authorities in road management and waste management which helps the city authorities in making their projected smart cities.
- **Transportation:** The company is currently working on a new product in order to make an entry in this sector and make life less hassling and save more time for the people of Bangladesh. The product will help its consumers to better manage the transportation system of the country.
- **Ride-sharing:** Barikoi provides its 'Map' and 'Location API' products for the companies that are working in this sector. The solutions are more reliable than other service providers and more cost effective. The key consumer in this sector is OBhai, Sheba.xyz and furthermore, Pathao used to be their client as well.
- **Delivery:** Barikoi built up a good amount of presence in the delivery sector with its 'Location API' product. The company has several clients in this sector that uses this product such as HungryNaki, Rapido Deliveries, TruckLagbe, ShopUp etc.
- **Retail:** Barikoi launched a new product named 'Trace' in order to provide for the retail market that helps in tracing and keeping record of the key retail players. The product helps

the companies which are dealing in this sector with this offering that contains the technological support through its mapping solution. The key clients in this sector are ShopUp, Lalmai Group.

2.4 Product & services offered

Barikoi offers the following products and services to their target customers:

2.4.1 Products

- **Location API:** Provider of highly accurate location data of Dhaka City and other local regions of Bangladesh. Relevant services under this product includes the following specifics:
- **Search and Geocoding:** Free text search and geocoding helps people to look for any address in Bangladesh.
- **Reverse Geocoding:** Transforms a machine readable location coordinate into a human readable location data.
- **Rupantor:** AI-enabled Geocoder that fixes malformed addresses.
- **Routing:** Provides directions, routing, distance matrix etc.
- **Snap to Road:** Visualize the road view of a particular route.
- **Urban Engine:** A dashboard for City Corporations, Paurashovas, and Union Porishod to unify and monitor all their services using one map-based dashboard.
- **Barikoi 360:** A Google Street view alternative specially developed for Bangladesh.

2.4.2 Services

- **Verify:** A tech-enabled Contact Point Verification (CPV) service to provide time-saving advantage to potential clients.

2.5 Current Users and Clients

Consumer Internet Companies:

- Sheba.XYZ
- Maya inc

- HungryNaki.com
- Kludio.com
- Shikho.com
- Handymama(verify)
- Ajkerdeal.com
- 10 Minute School

B2B Internet Companies:

- Landknock limited
- EasyTrax Vehicle Tracking Solution
- Rapido Deliveries
- ShopUp(verify, Logistics)
- Accigone
- Loop Logistics
- TruckLagbe
- StartIt
- MudiHat
- Walletmix

Government Organizations:

- 333 - Call center (DNCC Ward Zone Detection)
- Dhaka North City Corporation
- Bangladesh Post Office

Bank and Financial Organizations:

- The City Bank

2.6 Pipeline Customers

Dhaka South City Corporation, Narayanganj City Corporation, Mymensingh City Corporation, Unilever Bangladesh, Bangladesh Post, PepsiCo Bangladesh, Midland bank.

2.7 Organogram

Figure 2 resembles the corporate structure of Barikoi. Total number of employees is 39, which consists of 33 permanent employees and 6 contractual/temporary employees. Md Al Amin Sarker is the MD & CEO of Barikoi. At present, department-wise employee distribution is –

- Tech - 16
- Operations - 15
- Admin - 1
- Business - 1
- Contractual - 3
- Interns - 3

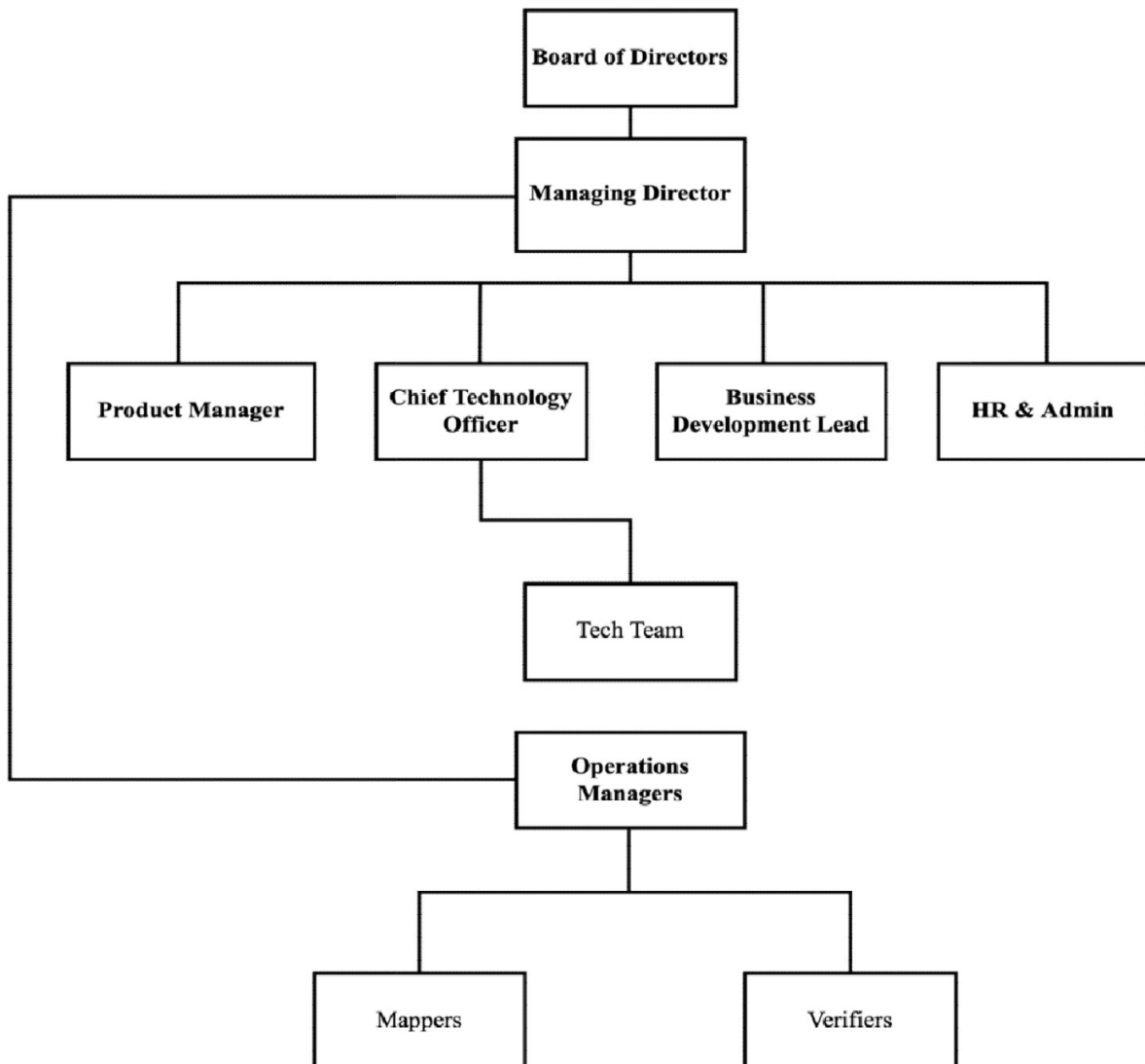


Figure 2: Organogram of Barikoi

2.8 Frequently Asked Questions

The market is still in the learning phase who are capitalizing on and exchanging services in the digital mapping industry. The most prevailing questions that have been frequently asked regarding the digital mapping industry are discussed below.

2.8.1 What is location mapping?

Proper planning is very necessary before we encounter the daily challenges in our lives. Location mapping provides the best data-driven solution to support the planning process in a simplistic manner. It is the process of drawing a visual representation of geospatial information related to the objects and spaces within our horizon. E.g., information related to Lands, buildings, cities, natural resources, traffic, water bodies etc.

2.8.2 Why do we need location information?

Technology adoption and technological revolution have changed the direction of human life. People are thinking of innovative ways to reduce the time and effort to do regular activities. With the user acceptance of tech-products and wearable devices the world is getting small enough to access the desired data easier than ever. People are becoming more curious about the widely spread data. Thus, the idea of location mapping services came up to accumulate the widely spread information around our horizon in a single platform to meet the information requirement of people around the world.

2.8.3 What is an API?

API or Application Programming Interface is a way of connecting a user to a server of any service provider. It communicates among different application servers to generate the requested output by the user. E.g., We use Maps in our smartphones to check for alternative routes to heavy traffic areas before attempting any commute. Whenever we set the route and hit the go button, an API call is automatically made in the back-end and the server returns all the possible routes as requested. Simply put, searching anything at the Google search bar or asking any question in Quora always makes an API call on each input.

2.8.4 Google Maps and Barikoi Comparison

Google, a renowned tech-giant, is the world's most resourceful and efficient search engine. It provides location data and services to the whole world using the information collected via different google portfolio services. Today, google refers to the name of reliability to millions of people on earth who seek location data on demand.

In contrast, Barikoi is on a mission to make the location of Bangladesh accessible with the most sought-after data so that people can access their desired information with minimal effort. It is committed to provide the most accurate location data which is more accurate than the google maps services. It is already popular among the renowned industries of Bangladesh with its diversified products & services.

Let's take a look at the comparison table of Google Maps and Barikoi to better understand their differences:

Point of Difference	Barikoi Maps	Google Maps
Service Area	B2B, B2G	B2C, B2B and B2G
Address Line Context	Local context of Bangladesh	Global context
Cost	90% cheaper compared to Google (Initially 30,000 free API calls)	\$0.5/1000 additional requests up to 100,000 daily
Business Model	API based business model	Advertisement based business model
Customization	Easy API customization	No customization available
Method of Field Data Collection	Purely human-based accurate data collection method by hiring field operatives called mappers	Road sensors, user contributions and local transport departments
Accuracy of Data	High	Not as accurate as Barikoi
Number of Services	Total of 6 active services	Around 273 active services
Payment System Support	Local MFS payment support, bank payment and credit card	Credit card payment only

Table 1: Barikoi Maps & Google Maps comparison table

It is evident that Barikoi has come up with a noble goal – to support tech-based businesses (mostly small and start-up businesses who cannot afford large EMIs that google maps charge) operating locally in Bangladesh by providing easily affordable services. Therefore, there are factual reasons to choose Barikoi over Google Maps when it comes to taking API services for business operations in Bangladesh.

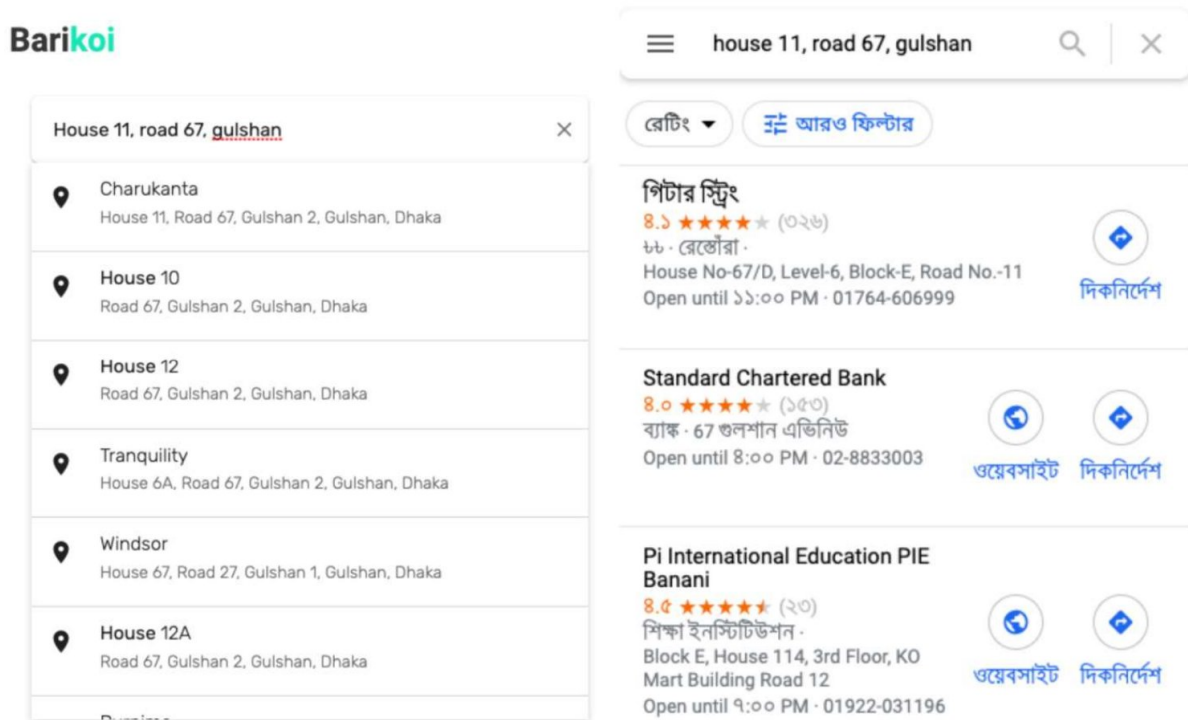


Figure 3: Data accuracy and address line format comparison between Barikoi & Google Maps

2.9 Barikoi SWOT Analysis

The following analysis reveals the internal strengths and weaknesses along with the external opportunities and threats of Barikoi Technologies Limited:

Strengths

- Monopoly in local mapping for Bangladesh
- Massive collection of local data
- Collaboration with government projects

Weaknesses

- Lack of awareness among the B2C segment of the country
- Horizontal and vertical expansion rate of the services are low

Opportunities

- Huge growth prospect with the availability of useful data
- Product diversification initiatives into the B2C and B2G segments
- First mover advantage in the country

Threats

- Competition against large investment at rival firms
- Threat of information loss due to corruption or data leakages

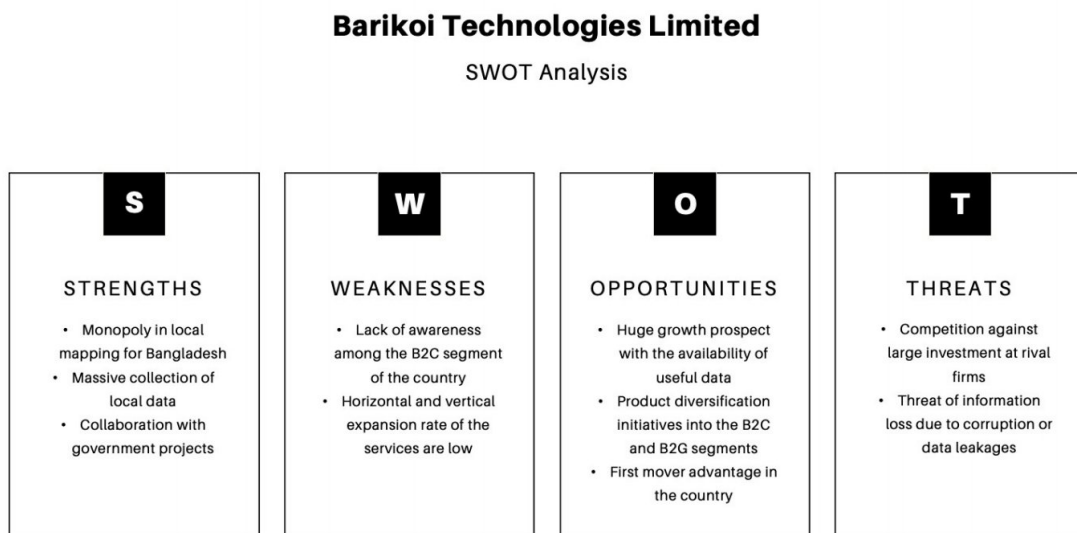


Figure 4: SWOT analysis of Barikoi

Chapter 3

Industry Analysis

3 Industry Analysis

In this section, the size and growth trend of the industry, the maturity and competitive environment have been described chronologically.

3.1 Industry Size

With the growing number of internet users globally and increasing demand for clean data, the digital mapping industry is growing rapidly around the world. As of 2021, the industry size was worth US \$19.2 Billion globally. The industry is anticipated to experience a CAGR of 15% over the period of 2021-2026 which is an attractive indicator for the investors.

In Bangladesh, the digital mapping industry had no significant operation locally before 2017, but had a growing demand. Since its inception in 2017, Barikoi has grown overtime as a location service provider in Bangladesh. Currently, the local mapping industry in Bangladesh is worth around BDT 3.0 billion whereas Barikoi is valued at around BDT 18.0 crore covering almost 6% market share in the country.

3.2 Growth Trend

The digital mapping industry started gaining its popularity from the emergence of Google Maps services back in 2005. It got more public attraction after the introduction of street view in 2007. With the ease of access to the internet, consumers started to learn the utility of having location data for efficient business operations. Google started to serve these consumers with their location data in exchange for money. Thereby local entrepreneurs found a strategic gap where Google's monopoly needed to be addressed closely to provide more accurate and organized location information for efficient business operation locally. Thus, Barikoi came up with the initiative to address this issue in 2017 to enable reliable location experience for Bangladesh.

Due to the tech learning phase among the consumers, both businesses and government sectors, of Bangladesh it took much time to attract the market towards the utility of the digital mapping industry. After successfully completing some major data feeding processes in its BMaps system, Barikoi started to stabilize its business operation and attracted the local service takers towards its own maps to capture its revenue in the market. Barikoi's year in

review during 2020-21 is shown in the figure below that explains the overall activities and achievements of the company so far.



Figure 5: Barikoi year in review 2021

3.3 Maturity of the Industry

The digital navigational map industry is booming with more potentiality than it had when the idea was first generated. The growth is increasing mainly due to the number of business opportunities it is creating within the country and thus improving the economy alongside it. The once emerging industry is already now in its growth phase due to its increasing demand and the evolution of technology. Through the evolution of technology, the supplier needs for a company becomes localized and makes it less laborious for the company to conduct its operation and for these reasons, more startups are coming into the market. The digital mapping industry started its journey a long time ago globally. Eventually, people started using it and after some time the businesses started embracing the technology. Now, with the help of

this solution, businesses such as the SMEs and logistics businesses are able to operate more efficiently than they could before. It is imperative to say that the digital mapping industry paved a way for new businesses such as the ride sharing businesses, food delivery businesses, trucking businesses and so on. The same happened for this country when the need for a digital mapping solution was first recognized. The recent pandemic even provided a boost for the industry as businesses felt the need of a mapping solution even more than before. Within the last five years, the industry gradually started to climb through the phases of industry life cycle and it got promoted to the growth phase from the emerging phase a while back. Now, the industry is worth around BDT 3.0 billion in Bangladesh. The reasons for its immense growth can be:

- The ease of technological use and its evolution.
- The increasing demand of the new business opportunities opening up.
- Able to carry out certain governmental projects efficiently and make life easier for the people.
- Growing importance of mapping technology.
- The time saving ability of all the businesses and people which are helping in the growth of the economy.
- The cost effectiveness compared to Google, TomTom etc.
- Less amount of tightness in the local law and regulations.

The digital mapping industry has more services in mind that it can offer and it still needs a good amount of time and revenue growth to improve its position in the industry life cycle. With how things are still going on in the country, the industry will see more growth in the future and will take time to reach the maturity of it.

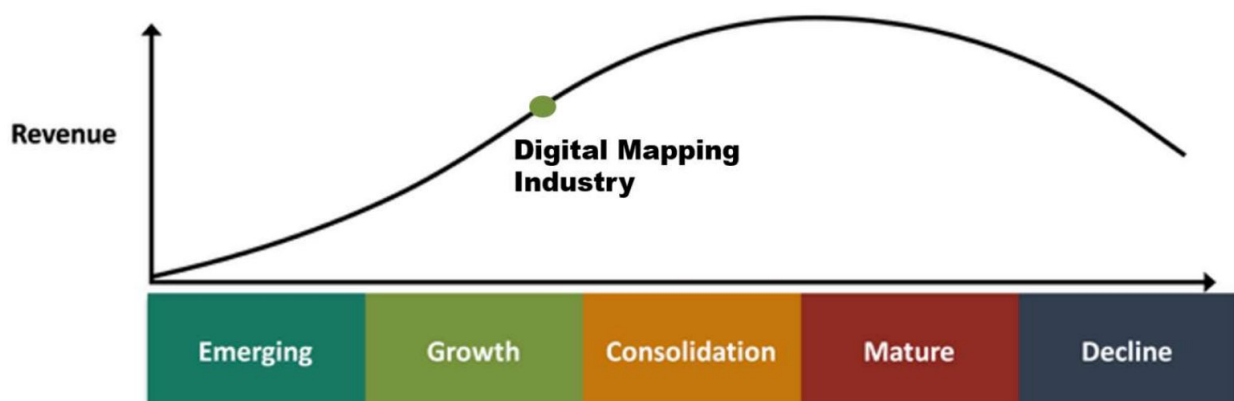


Figure 6: Industry life cycle of Digital Mapping Industry

3.4 External Economic Factors and Their Effect on the Industry

External economic factors refer to the factors that influence the consumer buying behavior affecting the overall performance of a company. Usually, companies don't have control over these factors. Key factors affecting the environment of digital mapping industry are explained below:

- **Existing market size**

Digital mapping industry has crossed US \$4.17 Billion in 2021 and it is expected to grow further during the coming days. Google holds the majority of the share, around 60.59%, in the API market while other competing candidates have started to capture their share in the market gradually. Due to its longer tenure compared to other existing competitors, such as Mapbox, OpenStreetMap, Baidu etc., Google has gained a lot of experience and popularity in the market. As a result, they could capture a substantial number of consumers in the market. However, the scenario has started to change for local markets with the emergence of local mapping industries in the developed and developing nations. In Bangladesh, for instance, Barikoi has started to provide similar services as Google in a more precise manner with their self-developed mapping services, solely based on the locations all over Bangladesh. With the growing popularity of the local mapping industry and its cheaper costs, Google is losing some of its share to the regional competitors as a consequence.

- **Consumer confidence**

Consumers will buy more goods or services when they are confident about their own financial conditions and the overall condition of the economy. Digital mapping services will gain more popularity among its users with the economic development of its goods in the market. As internet usage accelerated the technology adoption rate among users, consumers, businesses and governments have started to take services from the digital mapping industry to meet their ever-increasing requirements for location information. Google has gained its popularity by providing its efficient location information to consumers with accurate traffic data. As a result, users started to develop confidence within their services due to their global presence in the marketplace with their value-added services.

- **Competition**

Competition is a key economic factor for the digital mapping industry. Because it drives them to provide quality services to sustain in the marketplace. In the service industry, even a minor deviation in expected quality standards may cause the service taker to switch to other service providers. Thus, it promotes the tendency to maintain a culture of constant improvement and innovation within the industry. Firms like Mapbox, HERE technologies, OpenStreetMap, Bing etc. are competing with Google, which holds the highest share in the market, within the digital mapping industry. Meanwhile, the local and regional service providers have started to attract consumers and businesses towards their own mapping services during the past few years with technology adoption being the enabler of such services. In Bangladesh, for example, Barikoi has initiated their own mapping services for the B2B and B2G segments of the market with the belief that Google has only started meeting consumer demands while these segments have still remained untouched. Dingi Technologies Limited, a similar tech startup, has come up with similar services being the only local competitor of Barikoi in the marketplace. These companies have started to grow within the industry and attracted the local companies as well as the government due to their efficiency in services and reduction in service costs to develop a scalable economy with access to valuable location data for efficient business operation. The competition is popular in the logistics and supply chain, retail chain, government agencies, security and the banking sectors. With the ever-increasing demand for such data, location mapping industries are expected to grow further with this competition in the near future.

- **Reliability of the distribution of data**

Reliability of the distribution system is another important factor that fosters the popularity of the local mapping industry among its users. Users generally get their services based on monthly, quarterly or yearly subscriptions. If the service provider is at a distant location, then the service taker has limited control over the quality of information they are being provided with. The distant company may provide them with speculative data that are not the exact estimate the company is looking for. Thus, the reliability of data and its distribution to the user may be exposed to some form of risk. However, the problem seems to be nonexistent in case of the local service providers. Because the local

mappers focus on a micro-domain, the regional data being collected by the regional mappers, so that the quality of information doesn't lose accuracy and provide the service takers with reliable location data. Local industries are more accountable to their users due to their geospatial locus point in the host site. Thus, it increases the reliability of the local mapping industries over the global ones.

3.5 Seasonality

Seasonality refers to the pattern in which businesses within an industry generate the majority portion of their income streams within a particular period of time while portraying some form of predictability in its nature. However, the digital mapping industry doesn't portray such patterns directly, due to its nature of business practices.

The digital mapping industry earns revenue based on the search patterns of consumers and businesses. The direct match with the search keywords, advertisement, API calls, development support etc. are some of the major sources of their revenue. Maps generate different seasonal search trends depending on the geography and the needs of the consumers throughout the year. For instance, businesses that require efficient logistics and transportation support will subscribe for real-time tracking services throughout the year using mapping data and visual interface support. So, demand for the tracking services will remain close to constant over the year. Therefore, it would be very difficult to find out seasonality in the business of the digital mapping industry.

3.6 Competitive Environment Analysis

Competition in the digital mapping industry has started to grow high in the past decade and is anticipated to get more intensified during the coming years. Google, Mapbox, TomTom, HERE technologies, Digital Mapping Solutions etc. are some of the major players in the global digital mapping industry. These companies are developing collaborative strategic alliances among themselves to foster their capabilities to capture the leadership position within the market. Meanwhile, Bangladeshi entrepreneurs have already started to compete in the market to take their stake within the industry.

Barikoi is providing navigation services using various tools and technologies to assist the local businesses in the local market to start making its impact gradually. To better understand

the competitive position and the industry attractiveness of Barikoi within the industry, a Porter's Five Forces analysis has been performed below.

3.6.1 Barikoi Porter's Five Forces Analysis

The following analysis identifies five competitive forces that shape the company's competitive position within its industry and helps to formulate better business strategy to conduct its business proficiently and be more competitive.

Competition in the industry: Moderately strong

- Monopolistic business in the local mapping industry.
- Limited global customers and a small number of mapping companies with seamless map solutions available such as Google, TomTom etc.

Bargaining power of suppliers: Very Weak

- Supplier needs are localized as the company adopted the technology with ease.
- Less laborious for the company to manage the technology due to the technological evolution.
- Easiness in the local law and regulations.

Bargaining power of buyers: Moderately weak

- More expertise solutions available such as Google, TomTom but these are costlier.
- Free of cost for the local consumers to use the Barikoi Map (BMaps).
- A good number of B2B and B2G consumers are available to use the company's tech-based products.
- The bargaining power might reduce due to the growing importance of local mapping technology as it may attract more global buyers later on.

Threat of substitute products: Moderate

- No other local mapping company in the country
- The company provides cost effective solutions than other worldwide used mapping solutions.
- The other mapping companies have more experience in the business.

Threat of new entrants: Moderately Weak

- A new company will need a good amount of supplier base, technological ability to create a new local mapping platform.
- Fair amount of resources are required to maintain the seamless expertise and operational sustainability of the map which may be difficult for a newcomer to establish from scratch.

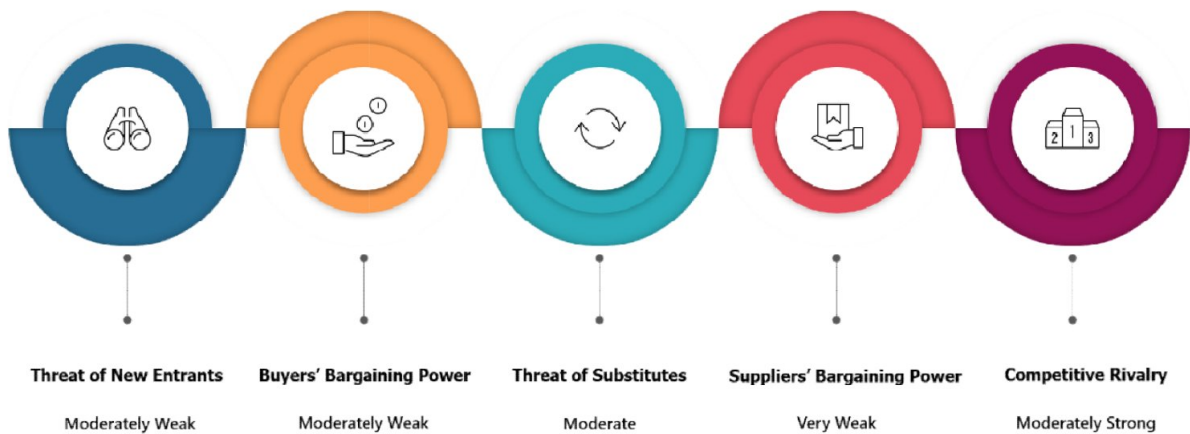


Figure 7: Barikoi's Porters Five Forces Model.

Chapter 4

Description of Main Duties

4 Description of Main Duties

I was hired in the position of “Business Analyst Intern” for the period of 3 months at Barikoi Technologies Limited. My responsibilities included working closely with the Managing Director of the company, preparing documents, attending meetings and performing various research based analysis as per the requirements of the company.

4.1 Completed Tasks and Learning Experiences

I had to perform different types of tasks during the whole period of my internship. Some of them included recurring tasks such as field visits and market research. The key activities I have performed and the experiences I have obtained along the way are explained below:

- **Research and Analysis**

I was assigned to work on the retail engine, a core focus area of Barikoi where they are planning to expand their verticals. For the development of this section, I performed some research based analysis on the following areas:

- Summarizing FMCG corporations of Bangladesh based on their revenue and analyzing their operations model to understand the supply chain of the consumer goods industry in the country.
- Preparation of a country profile of the LDCs (Least Developed Countries) based in Africa and nearby regions of Bangladesh like Pakistan where size of population is not less than 5 million. The intention of this task was to understand the retail chain operations in the foreign countries to look for potential business prospects outside Bangladesh.
- Performed a comparative analysis on the DMS (Distribution Management System) of sManager, Sokrio, Ekkbaz, Tallykhata, Mokam and Supplyline based on available internet sources to understand their features and level of consumer engagement in Bangladesh.
- The renowned biscuit & confectionery companies of Bangladesh and their products within the Bakery & Confectionery industry of the country to learn about the SKUs of each company.
- Explored different tech-enabled service industries of Bangladesh that includes the last-mile logistics (courier), ride hailing services and eCommerce and fCommerce industries

of the country. The purpose of this analysis was to find out the industry growth trends and report its attractiveness to Barikoi for engaging in prospective business dealings.

- **Market Survey**

I was assigned to survey a few retail market areas in Dhaka city along with two other intern associates, during the 5th week of my internship. The purpose was to communicate the existing retail markets and understand the shopkeeper's experience regarding the use of mobile app services like Mokam, Tallykhata, sManager etc. I performed the following tasks in this purpose:

- Prepared a well designed questionnaire to inquire about the retail markets of Dhaka city I was assigned to visit.
- Initially I started with the market of Nikunja-2, Khilkhet, Dhaka. I managed to survey a total of 31 retail shops of Nikunja-2 along with my team.
- After that I visited the market of Manikdi and Balughat Bazar beside the region of Dhaka CANTT. I surveyed 37 shops along with my team.
- Finally, I visited Paikpara Bazar, Mirpur-1, Dhaka and surveyed 25 major retail shops to understand their experience regarding the use of mobile app services for stock ordering purposes.

- **Documentation**

I used to document all my findings and summary of tasks in google doc and spreadsheet files for reporting purposes. The data I used to put into the documentations are:

- Software license packages terms and conditions for open source software libraries. I have documented the npm license packages and their key requirements for software licensing agreements before the launch of any software products or services.
- Consumer goods industry data based on its sales revenue. I collected the data from their annual reports and stock exchange (DSEX and CSEX) websites.
- Nielsen market research criteria for profiling the retail markets across the globe.
- Findings of market survey data in a spreadsheet and generating graphs and charts to report summary of findings in a visual form.
- Summary of some retail store data from a data vault of around 3500 shops that has been collected by the field operations team. I used the spreadsheet tool to enter the shop data according to the given criteria.

- **Meetings**

The meetings I have attended during my internship includes:

- **Stand-up meetings:** I attended meetings with the existing employees of Barikoi on a regular basis during the first hour of office. The meeting included short discussion regarding the OKRs set by the individual employees. My supervisor used to assign my tasks during the first hour of the meeting regularly.
- **Online meetings:** I attended some online meetings with my assigned supervisor during work from home in December 2021. When my supervisor was unavailable at the office due to having some client meetings outside, I used to take detailed instructions via team calls during that period.
- **Month end meetings:** I attended the team meetings at the end of each month that lasted longer than the regular ones. The overall progress of the projects and individual contributions were discussed in this meeting.
- **Year-in-review meeting:** I was lucky enough to attend the year-in-review meeting of Barikoi in January 2022.

- **Slide Preparation**

I prepared some slides to fulfill the partial requirements of the piloting of the bus tracking system project conceptualized by Barikoi. I prepared the following slides during my internship:

- Slides for bus tracking system in Dhaka city for the university students.
- Designed a value proposition canvas focusing on the benefits of using bus tracking systems in the BRTC buses and its utility to the BRTC authority.

- **Contribution in Projects**

I had the opportunity to contribute to two of the projects undertaken by Barikoi namely, “Piloting of Bus Tracking System” and “Barikoi Trace”. I will describe them below:

- **Bus tracking system**

I had to visit the transportation office of BUET and University of Dhaka to pursue their administrative managers for the piloting of a bus tracking project conceptualized by Barikoi.

- Attended meetings with BUET and DU transportation managers and collected requirements for proposing the procedure of initiating the piloting of the GPS enabled bus tracking system in their own buses.
- Prepared the project proposals for both BUET and DU and delivered them to the concerned authority.
- Communicated the delivery of the report to my supervisor and the concerned authority of BUET and DU transport authority.
- **Barikoi Trace**
- Visited a nearby market to snap some specific retail outlets using the retail trace app using my cell phone for the trace app geofence testing purposes.
- Took a pause of approximately 2 minutes at each store I have snapped earlier to test if the geofence feature is functioning properly.

4.2 Learning Experiences

While working at Barikoi during the 3 months of my internship period I could gather substantial knowledge to support my learnings. Mentioning the key learning experiences I have gathered so far:

- Got to experience how the business people and IT engineers interact and perform collaborative project works.
- Experienced how to respond to an unsupervised learning environment and pull off the tasks.
- The importance of clean data in the digital mapping industry and its revolutionary power.
- Learned about the consumer goods industry of Bangladesh and the business prospects of Barikoi within the industry.
- Identified the business needs of the courier, ride hailing and eCommerce and fCommerce industries of Bangladesh.
- The retail businesses of Bangladesh and the role of SRs (Sales Representatives) and DSRs (Distributors) within the industry. I found that there is a need for sales force automation for efficient distribution of goods in the market.
- Learned how to attend business meetings and prepare formal documents for business proposals.

- The functionality of the mobile and web applications used in the digital mapping sector.

I had a really enjoyable learning experience at Barikoi during the period of my internship. The work environment is conducive to learning and the associates were very helpful. Therefore, I could make the most use of my time in productivity while working at Barikoi.

4.3 Working Conditions

- **Usual Office Hours:** When I joined Barikoi as an intern in November 2021, the regular office hour was 10.00 AM to 6.00 PM, 6 days a week (Saturday - Thursday). Due to their constantly evolving nature and the demands of the employees as well as other industry alignments, Barikoi rescheduled their working hours to 10 AM to 7 PM, 5 days a week (Sunday - Thursday), starting from January 2022.
- **Overtime:** During the time of project development and delivery usually there's a lot of workloads going on over the permanent employees to meet the client requirements. Thereby they had to stay in the office longer than the usual working hours. As an intern, I did not have to take the extra workload and could leave the office as per the usual working hours. However, during some important meetings or some crucial task accomplishments, I had to stay in the office a bit longer than the usual working hours to attend the meetings or work on and deliver the tasks I was assigned to perform.
- **Work from Home:** Due to the renovation of the Barikoi office I had to work from home for a week during December 2021.
- **Field Visits:** I performed a few market visits on behalf of my company to understand and collect data from various retail markets of Dhaka city namely, Nikunja-2, Manikdi Bazar, Balughat Bazar and Paikpara market throughout the regions of Khilkhet, Dhaka CANTT and Mirpur-1.

4.4 Difficulties and Challenges

The infrastructure of Barikoi is completely IT based and engineers play a vital role in the service development area. Being a student of BTM it was not much of a hurdle for me to cope up with the environment of Barikoi since I had the minimum technological know-how. However, I had to face some challenges to cope up with the culture of the company during my initial days of joining as an intern. I am giving a debrief of these experiences below:

- **Understanding the aura of the overall organization:** It took me some time to get to know each employee of the company after my joining as an intern. I was a bit confused about the acceptance of my opinions to the existing people and the rules and regulations of the organization as a whole. Eventually, with time, I received a warm welcome from everyone that helped me to understand the things I should be doing as an intern within the organization.
- **Difficulties in understanding instructions:** I had to communicate a lot with the IT people in their language. It was difficult for me to understand the instructions at one go since they used to convey their messages in the engineering style. It led me to learn more about the digital mapping industry and its commonly used terms for communication purposes.
- **Learning from scratch:** Some topics were entirely new for me. Since I had no prior knowledge of those topics, I had to learn those from scratch by conducting extensive research to deliver the results. Although it was difficult for me to understand the topics in the first place, it was a very unique learning experience for me.

4.5 Frequency and Mode of Communication

The office area of Barikoi is pretty much compact which makes it more accessible to the employees throughout all the departments. As a startup company there is immense scope for the employees to speak up about their issues frequently and more directly than others. The frequency and mode of communication as of my observation at Barikoi is as follows:

- **Frequency of communication:** My tasks were mostly directed by our Managing Director (MD), Md Al Amin Sarker Tayef. I used to communicate frequently with the employees of Barikoi to get their opinions while performing my tasks. I reported all the final deliverables directly to our MD upon successful completion of each task.
- **Mode of Communication:** Microsoft teams is the most frequently used tool to communicate among ourselves and take attendance at Barikoi. All the sections are associated with relevant channels in teams so that an organization wide awareness is ensured and everyone gets updated once an announcement is being made. My supervisor used to assign my tasks via team messages. I used to contact him directly in case I needed further clarity regarding my assigned tasks.

4.6 Key Working Tools Used

For working purposes, I mostly used different tools like google doc, slide and spreadsheet. The authorization was shared between me and my supervisor to keep him updated about my work all the way through. I used Microsoft Teams to input my attendance in the office. Sometimes I used Canva to design some interactive slides for reporting purposes. During the partial requirement of a retail engine project, I used the retail trace web-app designed and developed by Barikoi to analyze and record some retail market data of Dhaka city. I also used the trace app for android mobile during my field visits to enter detailed imagery data in the trace database and test the piloting of the tracking service offered by Barikoi.

Chapter 5

Analysis

5 Analysis

I will explain the analysis part in three different levels – company level, market level and professional level. I will focus on the theories I have learned during my academics and try to align them with my observations while I was performing my tasks in the office.

5.1 Company Level Analysis

The observed efficient and inefficient processes during the period of my internship are explained below:

Efficient Processes: Since Barikoi is growing at a fast pace, I found some of their processes of task accomplishment extremely efficient.

- **Goal setting and accountability of tasks:** Employees at the individual level within the team set their own goals at the beginning of the day during the standup meetings regularly. They used to set their OKRs (Objective Key Responsibilities) for accountability purposes and take on the tasks as planned by the whole team.
- **Use of cloud services:** Barikoi uses Microsoft Azure web services to run their overall operation. Azure provides them with cloud computing, data storage, website hosting etc. services as per their need on a monthly subscription basis which is scalable. Cloud provides them with a streamlined database that ensures organization wide distribution of information which is readily available for the developers. Since Barikoi is able to insulate themselves from the cost of installing their own cloud services platform, it helps them cut a significant portion of their operations costs.
- **Streamlined communication:** All the employees are connected to the internet 24/7 and they use Microsoft teams for communication purposes among themselves. All the major updates are communicated via the channels so that everyone is aware of the changes.
- **Reliance on tools to buy some time:** Employees are expert at using online tools for official purposes. They use Canva to design interactive slides, Figma for prototyping purposes, Power BI for data visualization and decision making etc. Such tools include plenty of references to work on that saves significant time for the employees while ensuring accuracy of the tasks performed.

- **Efficient project management techniques:**The agile framework is being used to carry out most of the project works at Barikoi. The work breakdown structure is written on a board of scheduled tasks. Each task is assigned, ordered and removed based on the progress of the overall project. It ensures efficiency in the tasks performed and accelerates the project performance overtime.
- **One-to-one dealings with the clients:**Barikoi approaches any of their clients within an industry on a one-to-one basis. During the client engagement in one of their verticals (verify), they pursued the City Bank initially. Only after they onboarded the City Bank, they approached the Jamuna Bank later on. Barikoi analyzes their client's pain points very closely and they invest a substantial amount of time to develop a sustainable solution for them. Therefore, they are able to generate trust among their client base overtime.
- **Robust employee hiring and training processes:**Each of the employees Barikoi hires, goes through an interview process. Technical incumbents are given practical assignments that they are obligated to perform on spot within a specified period of time. All the incumbents go through a 3-month internship period before they can join Barikoi as a full-time employee. Thus, it ensures required training and proper assessment of each incumbent before making them permanent.
- **Individual consideration and consulting periods:**Employees are given the opportunity to consult both their personal and professional needs with the top management anytime. They are given the full autonomy of work so that they can evolve overtime. The CEO takes good care of his employees at an individual level to promote motivation among the employees. Therefore, a friendly work environment exists within the organization.

Inefficient Processes:Barikoi has just started growing and there is still room for improvements. Since it is a startup company its growth prospect is enormous. There are no significant inefficiencies within the company. However, I found that some of the employees are too reliant on taking approval from the top management or the CEO himself on every tiny detail. Although they prefer to maintain clarity all the way through, such tendency sometimes leads to delay in project schedules and co-workers might have to wait for the preceding task to be completed before they can move forward. Thus, it created an inefficiency in the planned processes and employees had to work longer to normalize the overall work schedule.

5.2 Market Level Analysis

Barikoi's nature of business and a large assortment of location data in their database created a core competency for their business operations within the digital mapping industry. The popularity has already started to grow among the businesses of Bangladesh. They are able to compete in the market with the following competitive advantages:

- **Industry knowledge and experience:**The pioneers of Barikoi are very good at what they do, they are always out there with a visual map within their minds. They know the locations, directions, challenges and the pain points of consumers and businesses all along. Employees of Barikoi are given comprehensive training so that they can understand the actual need in the market before they start developing any solution for the client. It helps the organization excel towards excellence with its industry knowledge and the ever increasing experience within the digital mapping business practices in Bangladesh.
- **Technological know-how:**Employees are well aware of the market demands and have the technological knowledge to design and develop the systems required to meet those.
- **Collection of data:**Barikoi has a large collection of data in their repository, around 1 million location points in the major cities of Bangladesh. Their collection of data is increasing even more and their business prospects are growing faster than before. New entrants will require giant investments and infrastructural support to collect this much data and compete with Barikoi. In spite of that, the time required to collect data and develop a competitive business model should also be considered. Therefore, Barikoi is way above the threat of competition from new entrants.
- **Monopoly in the local market:**Locally, only Dingi Technologies Limited is serving the same industry as Barikoi in Bangladesh. Provided the coverage and verticals Barikoi has, they are currently the most efficient location data service provider in Bangladesh.
- **Nature of business:**Considering the impact created on the existing market, Number of players in the digital mapping industry is not so many. The number is even lower in a developing country like Bangladesh. Barikoi has started serving businesses and government agencies of Bangladesh since the beginning of the technological bloom in the country. Since they don't serve the consumer market yet, it makes them different from other businesses and gives them the competitive advantage in the market considering the nature of their business practices.

- **Networking:**The sustainably efficient services provided by Barikoi have brought them to the limelight within the existing business organizations of Bangladesh. Therefore, they are able to develop a good relationship with the existing businesses being popular by providing their uninterrupted services.
- **Creative market awareness activities:**Barikoi writes interactive and informative blogs in medium.com to teach the market about the utility of their services and gather immense engagement towards their offerings.
- **Recreational events and activities for employee engagement:**Technology industry requires creative output which is only possible if mental health is sound enough. Barikoi promotes sports and recreational activities for the welfare of employee health, both mentally and physically. Therefore, they arrange office tours and promote sports activities among themselves to keep them healthy and fit. Going on an office tour enhances the relationship among coworkers which is also a good thing for a sound organizational culture.
- **Quality of work:**Barikoi has employees for software quality assurance (SQA) purposes. During the life cycle of each project, the quality team works relentlessly to ensure the quality commitment of each deliverable at each stage of the project development phases.

5.3 Professional Level Analysis

The knowledge I have gathered during the period of 3 months of internship at Barikoi will help me to learn more about my capabilities and encourage me to develop a constructive career plan in the coming days of my career.

- **Creating an impact on my career plans:**I have always wanted to learn more about data and its utility in business operations and development. As a business analyst intern, I got the opportunity to analyze the business operations across different industries that helped me gather data around different businesses to develop creative ideas for Barikoi's business, based on the observations and data I had gathered during my internship. I found the knowledge of spreadsheet, doc and slide-making really helpful in articulating my solutions and presenting them in a meaningful manner. I have seen how web-based modules help other businesses develop their strategic advantages over existing businesses by using the services of Barikoi. Things are getting better for Barikoi's expansion since

they have a rapidly expanding database and its updated versions to create scopes for prospective businesses. As soon as I got to learn about the utility of data, I got curious about learning even more about how analytics works and decided to pursue my career around the IT industry in the upcoming days.

- **Relevance with academic knowledge:** My academic knowledge had a significant correlation with the practical implication of my internship tasks in the office. I found myself privileged enough to have the understanding of the business terminologies as well as the underlying technologies that I could develop using my knowledge of the academic courses. It provided me with a conducive environment while at work during the whole period of my internship. I will describe below some of the relevancies between the learning outcomes of my academic courses and the practicality at Barikoi:
- The projects and labs I have undertaken in the CSE courses helped me a lot in understanding the workflow of the developers in the project works. I could observe how the back-end developers write codes to support the front-end developers and how the product manager passes through the key requirements to the developers for checking functionalities and designing interactive interfaces to make it a successful product launch.
- The financial courses helped me to understand the point of interest of the stakeholders and their decision-making processes in my organization.
- I could relate the importance of marketing in the promotional activities of Barikoi. Barikoi writes well-documented blogs to educate their target market about their technologies and offerings to help them develop a sustainable business operation.
- The quality management course helped me understand the quality perspective in the service industries and the importance of zero defects when it comes to technology products.
- If I talk about the role of an analyst in particular, the knowledge of supply chain management, research methodologies and data interpretation helped me a lot in taking decisions and gathering useful resources for Barikoi.
- I believe the core idea of my degree is to develop qualified individuals who can blend the knowledge of business and technology altogether to conceptualize and develop constructive business solutions in practice. I was able to observe the business people and the IT engineers while standing in the interception of business and technology so that I

can understand their point of interest and communicate their common needs in a meaningful way.

- **Challenges and difficulties:**The challenges and difficulties I faced during my internship are outlined below:
- Although I had the fundamental knowledge of IT, I did not specialize in any of the technological courses. If I had more tech-oriented courses and laboratory tasks, I could dive deeper into the organization.
- There was no direct supervisor to the business analyst intern position. I had to report directly to our MD for all the updates. As a result, I had to play the role of an employee as well as an intern and the learning process was quite unsupervised. If there were more business people in the business department, the experiences I have gathered so far would have been even more enriched.

Chapter 6

Conclusions and Recommendations

6.1 Conclusion

After the successful completion of my internship period as a “Business Analyst Intern” at Barikoi Technologies Limited, I learned how the processes of the organization works as a whole. My activities as an intern were not limited to the paper works, rather I had to conduct comprehensive research to learn about the mapping industry globally and how to generate ideas for creating potential business prospects to meet the company’s growth requirements. I had different theoretical knowledge about the activities conducted in an organizational setting, but after the completion of the internship program I have successfully understood the practical scenario. I learned the processes of aligning the theories with the real-world scenario in an organizational setting. Barikoi has been trying its best to create a sustainable business solution for its target market. Enabling reliable location data for Bangladesh is the vision of Barikoi and the organization has been trying its best to create one from the very beginning. Barikoi has been collaborating with other startup businesses to meet their growth objectives consistently. I have tried my best to reflect upon the activities that I have completed in my three months tenure and the learnings I have gathered within the timeframe. The working environment of Barikoi was really good with immense flexibility, which helped me to focus on the assigned tasks and complete them effectively. The employees of Barikoi had been extremely friendly and assisted me in every way possible. I have completed my three-month internship with the learnings of a lifetime which will help me both personally and professionally throughout my career.

6.2 Recommendations

I will mention below some of the critical observations and recommendations for Barikoi that may be useful for the overall organization:

- The number of employees in the business department should be increased by hiring experts in the field to create an accelerated growth opportunity for Barikoi.
- The communication gap among the employees should be decreased as much as possible. Although the employees are given a clear set of instructions, sometimes they do not understand what to do next and thus it affects the overall schedule of the project timeline by making delays.
- Since the company has stated positive growth in the market by making revenues from sales, it should expand its office space to accommodate the increasing number of potential employees in the organization.
- Barikoi should develop strategies to replace their one-to-one dealing system with multiple client handling systems. Although they are operating in the B2B and B2G segment of the country, they are expected to confront multiple client requests in the future with the growing number of startups in Bangladesh who are in need of reliable location data for different business purposes.

References

Google Maps Platform Announced New API pricing model. (2018, July 12).

Uplers.<https://www.uplers.com/blog/google-maps-platform-announced-new-api-pricing-model/>

Barikoi | Full-Stack Location Platform. (n.d.). Wwww.barikoi.com. Retrieved April 17,

2022, from<https://www.barikoi.com/map-api-pricing>

Barikoi. (2020, May 26). *A Pricing Comparison between Barikoi Place API VS*

Google Maps Places API. Medium.<https://barikoibd.medium.com/a-pricing-comparison-between-barikoi-maps-platform-vs-google-maps-platform-800a21955c9f>

Mohan, M. (2021, March 4). *Over 271 Google Products & Services You Probably*

Don't Know. Minterest.<https://www.matrics360.com/google-products-and-services/>

Barikoi. (2020, April 24). *Barikoi API's — Explained! How and Where Can We Use*

Them. Medium.<https://barikoibd.medium.com/barikoi-location-apis-explained-how-and-where-can-we-use-them-c5a22e091718>

Datanyze. (n.d.). *Google Maps API Market Share and Competitor Report |*

Compare to Google Maps API, Google Maps API (free), Leaflet. Datanyze.

Retrieved April 17, 2022, from<https://www.datanyze.com/market-share/mapping-and-gis--121/google-maps-api-market-share>

What is the economic environment. (n.d.). BDC.ca. <https://www.bdc.ca/en/articles-tools/entrepreneur-toolkit/templates-business-guides/glossary/economic-environment#:~:text=The%20term%20economic%20environment%20refers>

BARIKOI TECHNOLOGIES LTD. (n.d.). Idlc.com. Retrieved April 17, 2022, from <https://idlc.com/mbr/article.php?id=376>