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Internship Report on
Inbound Process Efficiency in Pathao Courier Logistics: A Fuzzy Logic Configurational Analysis

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

Letter of Transmittal

Khadija Khanom
Lecturer
Department of Business and Technology Management
Islamic University of Technology
Gazipur 1704, Bangladesh

Subject: Internship report submission of Pathao Courier Operations (Inbound Process)

Dear Ma'am,

I am delighted to submit my report titled "Inbound Process Efficiency in Pathao Courier Logistics: A Fuzzy Logic Configurational Analysis" as a component of my academic internship with the Pathao AIM Internship. This report was done under your supervision and guidance and meets the internship program criteria.

As you are aware, during my three-month internship with Pathao Ltd. I worked with the Courier Operations of Outside-Dhaka (OSD). Where I got introduced with Automated and Manual system of the whole 3rd generation courier system. Typically, I've collaborated with their teams handling inbound and outbound logistics, sorting, entry procedures, parcel relocation within designated areas, and reverse parcel entry operations in the field. This report provides an overview of the Inbound Process Efficiency and its components. This report, I believe, will make an important addition to ongoing discussions and attempts to improve the efficacy of Pathao Courier Logistics.

I want to sincerely thank you for your guidance and support during my internship. It has been an enriching journey, and I'm grateful for the opportunity to learn from you and the Pathao Courier-OSD Team. Your time and mentorship mean a lot to me. Feel free to reach out if you require further information or assistance.

Sincerely,

Jawadul Islam
Id: 190061103
Session: Academic Year 2023-2024
Department of Business and Technology Management
Islamic University of Technology

Acknowledgement

The following internship report was completed with the assistance and direction of numerous people. I'd like to express my sincere appreciation to everyone that contributed to making this report happen.

First and foremost, I would like to thank Almighty Allah, the Merciful. This report would not have been completed on time without Allah's blessing. Following that, I'd like to express my gratitude to my honored Advisor, Lecturer **Khadija Khanom**, for leading me through the entire procedure with his valuable insights and instructions.

I'd also like to thank **Saddam Hossain**, General Manager – Courier Operations, Pathao Bangladesh and the team members for welcoming me in a pleasant work atmosphere. **Mohiuddin Ripon** (Senior Manager, OSD), **Ahmed Sakib Ar Rafee** (Senior Manager, OSD), and **Mehadi Hassan Tanvir** (Senior Executive, OSD) deserve special recognition for their constant support and help throughout my internship. They taught me much about how the 3rd Generation logistics system works and taught me a lot of important things. During my internship, I learned a lot that I can apply in my professional career.

Finally, I'd like to express my deepest gratitude to everyone who was involved in making this internship report. This internship report would not have been accomplished without the assistance of all of these wonderful people. Once again, thank you.

Declaration of The Student

I, Jawadul Islam, a Business and Technology Management student at the Islamic University of Technology, hereby declare that the Internship Report titled "Inbound Process Efficiency in Pathao Courier Logistics: A Fuzzy Logic Configurational Analysis" is my original work completed under the supervision of Khadija Khanom, Lecturer, Department of Business and Technology Management, Islamic University of Technology.

I further affirm that this report has not been submitted in part or in full for any other degree or diploma program. This report's information and statistics are based on my own research and are correct to the best of my knowledge.

I acknowledge that any support received throughout the internship and report preparation has been properly acknowledged in this report. The information sources included in this report have been properly referenced.

Sincerely Yours,

Jawadul Islam
Id: 190061103
Department of Business and Technology Management
Islamic University of Technology

Executive Summary

Pathao Bangladesh is a revolutionary technological platform that has transformed Bangladesh's transportation and logistics industry. Since its founding, Pathao has been dedicated to providing easy, dependable, and economical solutions to satisfy the changing demands of consumers and companies. Pathao's revolutionary smartphone application provides a variety of services, including ride-sharing, food service delivery, parcel delivery, Courier, and grocery delivery. These services are powered by cutting-edge technology and a network of expert riders, assuring timely and effective service delivery throughout the country.

Pathao has effectively capitalized on the growing demand for on-demand services by using its extensive knowledge of the local market and nimble business approach. Pathao has established itself as a trusted brand by putting customer satisfaction and safety first, winning worldwide recognition and loyalty.

Pathao is set for future development and expansion, with goals to improve its service offerings, broaden its geographical reach, and deepen its relationships with businesses and stakeholders. Pathao is committed to influencing the future of transportation and logistics in Bangladesh by focusing relentlessly on innovation and customer-centricity.

The goal of this report is to investigate and deep dive into the role of inbound process efficiency in the courier industry. The first section of this report thoroughly describes the program and provides a better understanding of all program components, the working procedures of several units of this program (automated and manual), the monitoring procedure, the sorting process on-field, and the difficulties that are encountered when carrying out and monitoring the operational activities of the entire supply chain. Furthermore, it provides a brief overview of the Courier operations segment's role in resolving various issues, including the process of developing a sophisticated monitoring and evaluation framework, increasing the capacity of program personnel, and properly managing data collection and analysis through the proper use of technology.

The analysis goes on to emphasize Pathao Courier Logistics' success in terms of inbound process efficiency. The report emphasizes the importance of investing in solid operational structures to ensure program success and sustainability in the future.

Table of Content

List of Figures

List of Tables

Chapter 1: Introduction

1. Introduction:

The internship report aims to highlight key takeaways from completed tasks throughout the internship. The goal is to discover and enhance various competencies that have developed during the internship period, as well as learning objectives. This study focuses on the incoming process efficiency of Pathao Courier Logistics, which is being analyzed using fuzzy logic. I completed my internship with Pathao Limited's Operations Team.

A company's operations are its backbone, guaranteeing maximum efficiency and seamless operation across all business facets. There are many different jobs and duties involved in operations. The Pathao operations team is divided by several teams, such as supply chain, quality control, customer support, logistics, and supply chain teams. Over my three months there, I had the opportunity to work with all of the teams and gained a comprehensive grasp of operations as a whole, although I spent the majority of my time with the logistics team.

Pathao's collaborative outlook and warm atmosphere helped me go beyond my boundaries. I was continuously encouraged to try new things and share my opinions on them. Everyone, including senior coworkers, helped me learn new skills on occasion. Pathao organizes a variety of cross-departmental events and activities, which allowed me to meet individuals from different departments and gain a greater knowledge of Pathao's daily operations. In addition to the skills I've learned, I've worked hard to apply my knowledge in the workplace. The work I completed throughout my time in the Operations department motivated me to refine my existing skills and learn new ones that would benefit both my career and personal growth.

1.1. Background of the Study

Traditional classroom education acts as a springboard to acquiring a degree and entering the professional world, with internships serving as the first step. Completing a bachelor's degree at Islamic University of Technology necessitates participation in an internship course, which provides students with significant hands-on experience in reputable firms. My internship with Pathao Courier helped me to apply what I learned in the classroom to real-world settings. My major aim throughout my internship was to create a convincing operations report, and executives in the operations department continuously supported such effort. This curriculum has provided me with practical information and experience that will be extremely beneficial in my future professional career. While it usually takes some time to adjust to a new working environment, I found myself fitting in more easily after only a few weeks.

1.2. Objective of the Report

This report delves into how Pathao Courier Logistics is creating an impact in Bangladesh's courier sector by concentrating on the efficiency of its inbound process operations. I've dedicated my heart and soul into demonstrating the methods, the overall picture, and examining different facets of Pathao Limited. Throughout this study, I've tried to convey my personal findings through research and firsthand experience with Pathao Courier.

1.3. Methodology

I've tapped into Pathao's OMS system to gather both observational and order data, which has been instrumental in shaping my methodology and compiling this report. This data not only lets us see how people behave and interact firsthand but also gives us a clear picture of the outcomes of those behaviors and interactions.

1.3.1. Types of Research

To support my study, I combined qualitative and quantitative research techniques. Incorporating both theoretical understanding and practical observations, my paper draws from my internship with the division. I went to numerous Hubs starting from the Center Warehouse, Hazaribag Hub, Motijheel Hub, Chittagong Hub (Nasirabad and Halisahar), Comilla Hub, and Comilla Sorting Hub, among other hubs, and I kept my supervisor informed on all I saw and learned on a regular basis.

1.3.2. Primary and Secondary Data Collection

I have tried to collect both primary and secondary data to make the report more meaningful.

Primary Data

- Observation of working procedure of different department.
- Observation of working procedure of different Hubs.
- Observation of working procedure of the warehouse.
- KAM, QC team, Sales Team, Return and Pick up team and Acquisition team.

Secondary Data:

- Annual Report of Pathao Courier.
- Monthly Report of Pathao Courier.
- Weekly Report of Pathao Courier.
- TPO Report.

1.4. Scope of the Study

I have tried to discuss about the following topics-

- Process of Pathao Courier.
- Sorting Process.
- Return Process.
- Hub Operations.
- Core Operations.
- Transportation.
- Sales and Acquisition process.

1.5. Limitations of the Study

- The report has a practical foundation.
- The use of the company's data was subject to certain restrictions.
- Inadequate analytical abilities and breadth of knowledge to produce this report.
- I never completed a survey. Therefore, I am unable to offer any empirical results.

I have made every effort to get around these obstacles in order to produce an excellent report.

Chapter 2: Organization Overview

2. Company Overview:

2.1. Overview of Pathao Limited

2.1.1. Introduction

Pathao Ltd. is more than simply a business; it's an example of the strength of creativity and solutions generated by the community. In 2015, Pathao was born in the bustling streets of Dhaka, Bangladesh, and quickly became a ray of light for travelers stuck in the madness of the city's traffic. Pathao was co-founded by three visionaries who were passionate about technology and wanted to change the world: Fahim Saleh, Hussain Elius, and Shifat Adnan. Since then, the company has grown into a multidimensional digital juggernaut that is changing logistics and transportation throughout South Asia and beyond.

Pathao Ltd is a transportation service company with offices in Dhaka, Chittagong, and other Bangladeshi cities. They now provide services in Dhaka, Sylhet, Chittagong, and Nepal. It oversees mobile apps for merchants and ecommerce services. Pathao Ltd riders (drivers) are free to utilize their own motorcycles and vehicles. Bangladesh's capital, Dhaka, is a densely populated metropolitan area. Growing up in this area, we were frequently reminded of "the traffic" and the terrible jams. Pathao Ltd started as a nationwide delivery service, rather than an internet transportation bike business. Pathao Ltd. has demonstrated exceptional ideation, service, and implementation in a short period of time.

Figure 1: Logo of Pathao

Pathao provides the most modern logistical services in Bangladesh. Their highly qualified bicycle couriers ensure speedy order fulfillment. They offer high-quality service at low prices by utilizing innovative technology.

The application-based company provides same-day delivery of products across the country, as well as a secure delivery option and authorized drivers. A rising number of internet businesses require delivery services. Although just a few administrations excel in this area, there is room for experimentation. In Dhaka, it might be challenging to provide same-day delivery owing to traffic and payment requirements for online businesses. Pathao Ltd appears to be targeting the B2C and C2C markets with a focus on small-scale offerings.

They recognized the rising e-commerce industry as a priority and aimed to aid in its development. They then switched to their means of transportation. We chose two-wheelers over vehicles and CNGs in Dhaka, a bustling and tight metropolis, due to the long hours spent in traffic. In Dhaka, they are offering on-demand motorbike tours.

2.1.2. Mission

At the heart of Pathao's journey lies a simple yet profound mission: to transform the way people move, connect, and thrive. Every decision, every innovation, and every partnership is guided by this overarching goal. Pathao is not merely a transportation company; it's a catalyst for change, empowering individuals and communities to access opportunities, overcome obstacles, and realize their fullest potential.

2.1.3. Vision

Imagine a world where distance is no longer a barrier, where every need is just a tap away, and where technology serves as a bridge between dreams and reality. This is the vision that propels Pathao forward—a vision of seamless connectivity, boundless possibilities, and shared prosperity. By harnessing the power of technology, Pathao seeks to create a future where transportation and logistics are not just efficient but also inclusive, sustainable, and empowering for all.

2.1.4. Objective

Pathao's objective is multifaceted, with a focus on assisting the varied communities in which it serves. From emphasizing consumer convenience and price to creating economic possibilities for drivers and merchants, every initiative demonstrates a commitment to quality, innovation, and societal impact. Pathao's dedication to excellence and client happiness is unwavering, whether it's reinventing the ride-hailing business, expanding into new areas, or bringing innovative solutions to growing difficulties.

Pathao Ltd, founded in 2015, has attempted to reduce traffic congestion in Dhaka by providing transportation services for both goods and passengers using two-wheelers, similar to Bangladesh's own version of "Go-Jek." With a large rise in daily travels, Pathao's activities have swiftly grown, beginning as a courier service and developing to meet the rising need for dependable e-commerce deliveries in Bangladesh. Collaborations with significant businesses such as Daraaz and Bikroy.com demonstrate Pathao's dedication to improving the country's delivery ecology.

Pathao Ltd's structure is simple, as seen by its user-friendly app on the Google Play Store. Customers may easily book rides or request direct pickups for their goods, with riders often arriving within 20 minutes to collect and deliver products to their specified locations. This service matches the simplicity and efficiency of popular platforms including as Go-Jek, Grab, and Uber, providing a quick alternative to traditional modes of transportation in Dhaka.

Pathao Limited's primary objectives include:

- Establishing strong customer relationships based on trust and excellent service.
- Cultivating an environment of honesty, transparency, and support.
- Valuing and respecting individuals based on merit.
- Pursuing sustainable profit and expansion.
- Generating employment opportunities across Bangladesh.

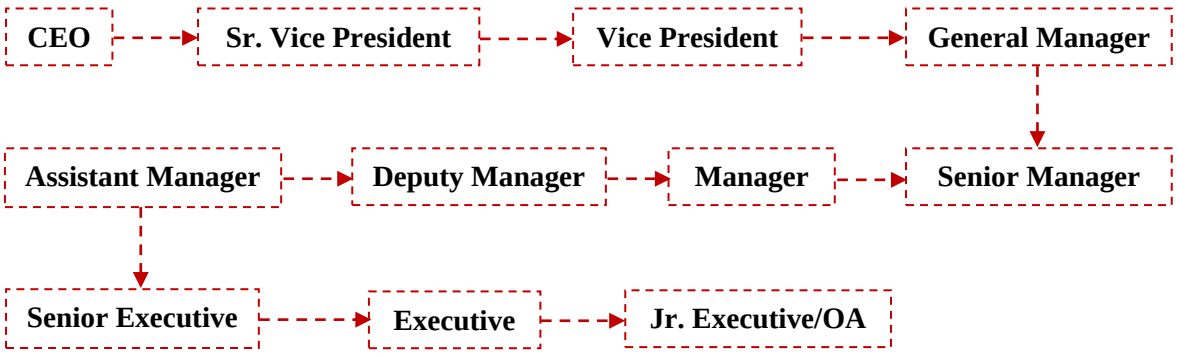
- Fostering teamwork for the company's benefit.
- Maintaining a steadfast commitment to progress and innovation.
- Operating with integrity, responsibility, and adherence to the law.
- Alleviating traffic congestion in Dhaka.
- Providing a cash-on-delivery service that satisfies both merchants and consumers.

2.1.5. Organizational Structure

Behind every successful venture lies a team of dedicated individuals united by a common purpose. Pathao's organizational structure reflects this ethos, fostering a culture of collaboration, creativity, and accountability. From the leadership team steering the company's strategic direction to the frontline staff delivering exceptional service to customers, every member of the Pathao family plays a vital role in shaping the company's success and impact. Pathao has a various department that carry out several tasks. They are:

- Product
- Engineering
- Design
- Finance, Accounts & Procurement
- Human Resources & Culture
- Administration & IT
- Legal, Regulatory & Corporate Affairs
- Marketing
- Rides & Supply Operations
- Food Operations
- Customer Experience
- Marketplace
- Fulfillment
- Pathao Pay

Below is the hierarchical structure of Pathao Ltd.:



2.2. Products and Services Produced and Offered to Customers

Pathao is an on-demand ride-sharing company that originated as an e-commerce delivery business. They have recently expanded into the meal delivery market. Pathao provides many services through a single platform. The "Pathao" app is designed for their end consumers. As a platform-based firm, they must link service providers with end users. For example, bike riders, car drivers, food delivery guys, packages, and courier delivery agents are all service providers. Our end clients, on the other side, want faster and safer transportation, as well as home delivery for food, gifts, or couriers. Pathao is essentially a bridge that links service providers and customers. Pathao's services are based on four mobile applications. They are: Pathao, Pathao Drive, Pathao Agent, and Pathao Resto.

Pathao App: More than just a mobile application, the Pathao app is a gateway to a world of possibilities. With its user-friendly interface and intuitive features, the app allows customers to access a wide range of services, including ride-hailing, food delivery, courier services, and more, all at their fingertips.

Pathao Drive: Powered by a network of passionate drivers and cutting-edge technology, Pathao Drive offers commuters a convenient, reliable, and affordable transportation solution. Whether it's a quick ride to the office or a leisurely journey across town, Pathao Drive ensures that every trip is a seamless and enjoyable experience.

Pathao Agent: In a world where digital connectivity remains elusive for many, Pathao Agent bridges the gap by providing essential services to underserved communities. From facilitating cash transactions to booking tickets and paying bills, Pathao Agent empowers individuals to access vital services with ease and convenience.

Pathao Resto: Hunger knows no boundaries, and neither does Pathao Resto. As the go-to destination for foodies across the region, Pathao Resto brings together a diverse array of cuisines from local restaurants and eateries, delivering culinary delights straight to customers' doorsteps.

2.2.1. All the Services Pathao Provides

Pathao Bike: Motorcycle ride-hailing service catering to commuters' needs for swift and efficient transportation.

Pathao Car: Car ride-hailing service offering comfort and convenience for individuals and groups alike.

Pathao Food: Food delivery service connecting customers with their favorite restaurants and cuisines, ensuring that no craving goes unanswered.

Pathao Pay: A seamless payment solution designed to revolutionize the way transactions are conducted, empowering individuals and businesses alike.

Pathao Tong: Environmentally friendly electric rickshaw ride-hailing service, providing an eco-conscious alternative for short-distance travel.

Pathao Shop: E-commerce platform empowering local businesses to reach a wider audience and thrive in the digital age.

Pathao Parcel: Courier and parcel delivery service, delivering packages with speed, reliability, and care.

Pathao Courier: Express courier service for urgent deliveries, ensuring that packages reach their destination on time, every time.

Pathao Pharma: Online pharmacy offering a wide range of medications and healthcare products, delivered straight to customers' homes.

Pathao Health: Healthcare services including telemedicine and health consultations, bringing medical expertise within reach for individuals in need.

Top-up: Mobile recharge service, allowing customers to stay connected and communicate effortlessly with their loved ones.

2.2.2. Pathao's Worldwide Operations

What began as a humble initiative in the bustling streets of Dhaka has now blossomed into a global phenomenon, with Pathao's footprint extending far beyond its roots in Bangladesh. From the crowded metropolises of South Asia to the bustling cities of the Middle East and beyond, Pathao's services have touched the lives of millions, transcending geographical boundaries and cultural barriers. Through strategic partnerships, localized offerings, and a deep understanding of local needs and preferences, Pathao continues to expand its presence and impact, enriching the lives of individuals and communities around the world. Whether it's providing transportation solutions in congested urban centers or delivering essential goods to remote villages, Pathao remains committed to its mission of connecting people, goods, and services, wherever they may be.

2.3. Company Analysis

2.3.1. Pestle analysis

PESTEL Analysis

ANALYSIS OF PATHAO LTD.

P — POLITICS

- **Government regulations:** Pathao operates in various countries, each with its own regulatory environment for transportation and technology companies.
- **Political stability:** Political instability in any region where Pathao operates can impact its operations and growth prospects.

E — ECONOMY

- **Economic growth:** Pathao's growth is influenced by the overall economic conditions of the countries it operates in.
- **Income levels:** Higher disposable incomes may lead to increased usage of Pathao's services, while economic downturns could result in reduced spending on non-essential services.

S — SOCIETY

- **Cultural factors:** Pathao must consider cultural nuances in different regions, including preferences for transportation modes and acceptance of technology.
- **Demographic trends:** Changes in population demographics, such as urbanization and the rise of the middle class, can affect the demand for Pathao's services.

T — TECHNOLOGY

- **Innovation:** Pathao relies heavily on technological advancements to improve its services, enhance user experience, and stay ahead of competitors.
- **Data security:** With the collection of user data, Pathao must prioritize data security and privacy to maintain trust among its users.

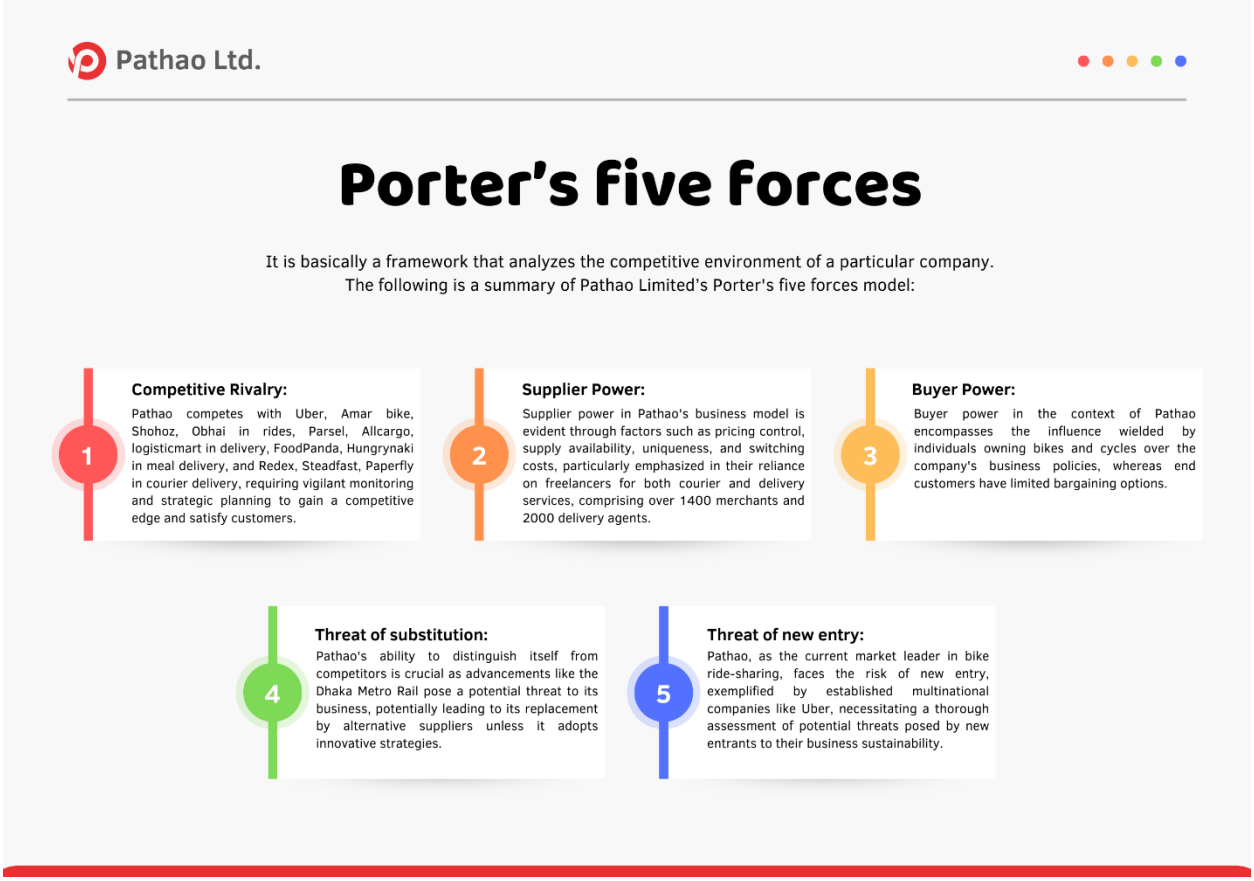
E — ENVIRONMENT

- **Sustainability:** Pathao can explore opportunities to reduce its environmental footprint by promoting the use of electric vehicles and adopting eco-friendly practices.
- **Climate change:** Extreme weather events and climate change can disrupt operations and infrastructure, impacting Pathao's ability to provide services reliably.

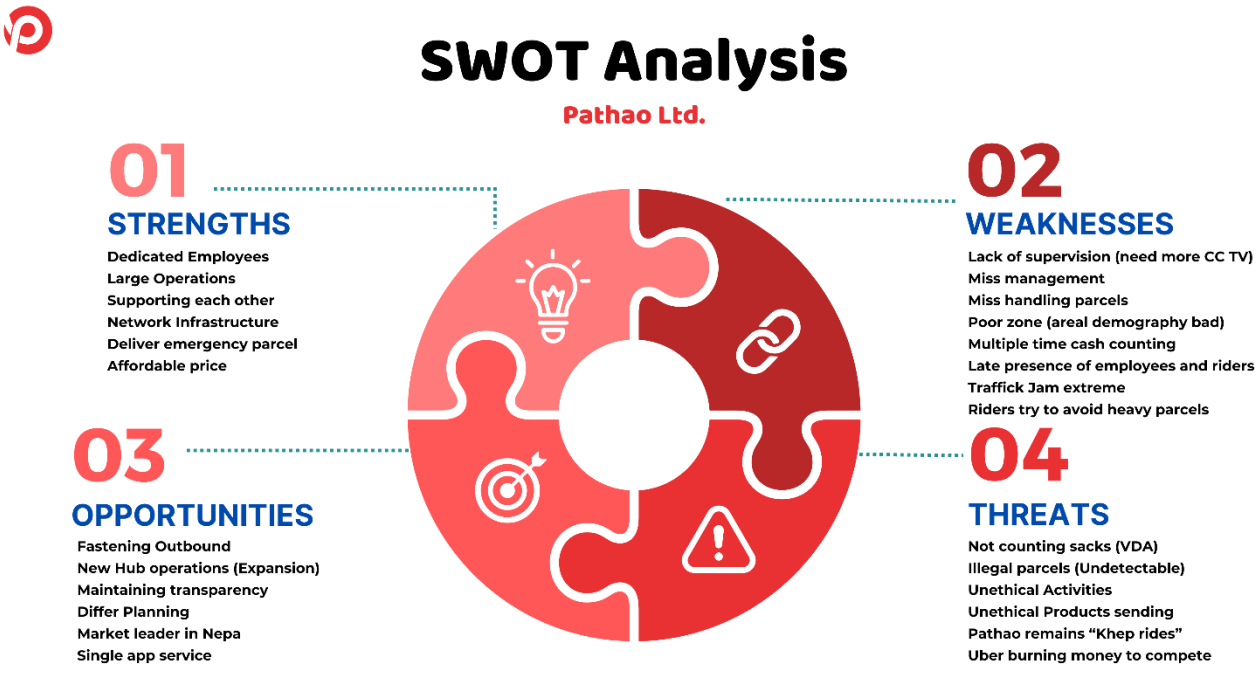
L — LAW

- **Regulatory compliance:** Pathao must adhere to laws and regulations governing transportation, data privacy, and employment practices in each country of operation.
- **Intellectual property rights:** Pathao's technology and brand assets are valuable intellectual property, requiring legal protection against infringement.

2.3.2. Porter's Five Forces



2.3.3. SWOT Analysis



Chapter 3: Industry Analysis

3. Industry Analysis

Pathao Ltd. operates within the transportation and logistics sector, with a primary focus on ride-sharing and delivery services. Positioned as a prominent player in the market, Pathao encounters competition from traditional taxi services and other ride-sharing platforms. The industry is marked by fierce rivalry, shifting regulatory frameworks, and advancements in technology.

Pathao spans across multiple sectors, but its core emphasis lies in ride-sharing, where it serves as a flagship brand. Additionally, it holds a significant presence in the food delivery realm. Pathao entered the market as a pioneer of bike ride-sharing in 2016, quickly amassing a substantial network of drivers and passengers nationwide by March 2018. The success of the ride-sharing industry is underpinned by various factors such as robust investor funding, superior access to talent compared to other startups in Bangladesh, and effective public relations strategies. However, challenges including stiff competition, regulatory scrutiny, and consumer distrust pose significant hurdles.

A notable trend in Bangladesh is the increasing preference for motorcycle-based ridesharing services, contributing to the growth of this sector. Pathao's Courier Service stands out as the country's first home delivery service. Presently, Pathao operates in 64 districts, facilitating deliveries within major metropolitan areas like Dhaka, Chittagong, Sylhet, Khulna, and Rajshahi within 24-72 hours. For on-demand and express deliveries within Dhaka, the service ensures a swift turnaround of 4-6 hours from pickup to customer delivery.

3.1. Size and Growth of the Industry

Over the past decade, the transportation and logistics sector has experienced remarkable growth, driven by factors like urbanization, increasing disposable incomes, and widespread smartphone adoption. Market analysis indicates that the global ride-sharing market was valued at $106.28 billion in 2022, with projections suggesting it will hit $390.47 billion by 2030, growing steadily at a compound annual growth rate (CAGR) of 17.45%. This growth is propelled by the rising demand for economical and time-efficient transportation solutions. Factors such as the escalating costs associated with car ownership, the imperative to alleviate traffic congestion for environmental concerns, and governmental directives advocating for ride-sharing services contribute to the escalating global adoption of such services. Uber and Lyft stand out as dominant players on the international stage.

In Bangladesh, the ride-sharing market is estimated at Tk2,200 crore, constituting approximately 23% of the nation's transportation sector, as per the Policy Research Institute. Data reveals a substantial increase in the utilization of ride-sharing apps, with commuters averaging 6 million trips per month in February 2019, surging to 7.5 million monthly rides presently, surpassing previous figures. Presently, ride-sharing startups boast a collective market valuation of $300 million across diverse business domains. This valuation is anticipated to soar to $1 billion within

the next 5 to 7 years, with some industry insiders even speculating an expedited achievement of this milestone.

Pathao Courier is now the market leader in the Bangladesh courier industry.The overall process of last 34 months of pathao courier is given below:

Period	Processed	Delivered	Returned	Backlogs	Success	R/n Rate	B/Logs
Nov'23	2,596,266	2,274,804	281,212	39,789	88%	11%	2%
Dec'23	2,495,682	2,219,388	275,392	208	89%	11%	0%
Jan'24	2,426,570	2,158,070	249,981	17,998	89%	10%	1%
Feb'24	2,457,192	2,173 ,060	228,927	54,731	88%	9%	2%

Table 1: Business update of Pathao courier

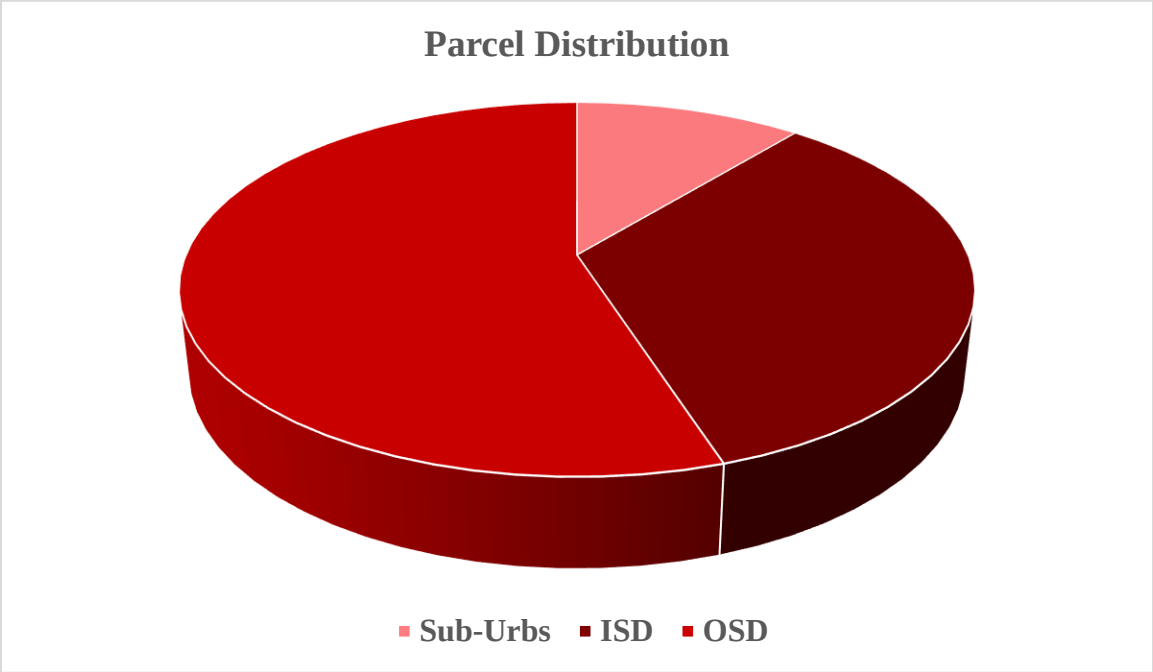


Figure 2: Order distribution of April 2024

Here,

OSD=Delivery number of Outside Dhaka

ISD=Delivery number of Inside Dhaka

Sub-Urbs=Delivery number of Around Dhaka City.

Estimated Revenue & Valuation

- Pathao presently generates an approximate yearly revenue of $278.8 million.
- The estimated revenue per employee at Pathao stands at $314,031.

Employee Data

- Pathao currently employs a workforce of 1600 individuals.
- Pathao experienced a 41% increase in their employee numbers over the previous year.

3.2. Maturity of the Industry

As the ride-sharing market evolves, with firms establishing themselves and rules changing, there is a greater emphasis on efficiency, service growth, and distinctiveness. This trend suggests both consolidation and opportunity for innovation. Unlike in Western nations where car-based services are prevalent, Dhaka is seeing an increase in motorcycle-based ridesharing, which provides cheaper alternatives to autorickshaws and taxis. This change not only saves time and improves mobility in crowded traffic, but it also creates countless job chances. Motorcycle sales are growing more than 40% year on year, with Pathao claiming over 200,000 registered drivers, according to Reuters. The government is actively involved, with efforts such as the Dhaka North City Corporation's construction of a 9-kilometer bike lane addressing the city's key transportation issues.

3.3. External Economic Factors and their Effect on the Industry

External economic factors such as GDP growth, fuel prices, and consumer spending habits wield substantial influence over the transportation and logistics sector. Variations in fuel costs directly impact operational expenses, while shifts in consumer behavior can alter the demand for ride-sharing services. Moreover, economic downturns often translate to decreased discretionary spending, thereby impacting the frequency of rides and deliveries. Conversely, during economic upswings, heightened consumer confidence and purchasing power typically stimulate demand for transportation services.

In addition to its economic significance, this industry plays a crucial role in providing livelihoods for many individuals, particularly those who have faced unemployment. Within the sharing economy, maintaining an appropriate balance between drivers and passengers is essential for sustaining a healthy business environment. This need has become even more pronounced during lockdown periods, where a significant portion of the workforce found themselves jobless, leading to a surge in traffic congestion.

Despite recent concerns regarding its long-term viability, experts remain optimistic about the future of ridesharing services, anticipating a larger share of the global transportation market. Projections indicate substantial growth, with the ridesharing sector expected to reach $218 billion by 2025 and $285 billion annually by 2030, up from $61 billion in 2018. Over the next three years, approximately 100 million people are projected to utilize ridesharing services worldwide.

3.4. Legal Bindings of the Industry

The ride-sharing industry operates within the framework of rules and regulations enacted by local governments and transportation agencies. These laws address a wide range of concerns, including driver qualifications, vehicle safety, fares, and insurance. Compliance with these standards is critical for organizations like Pathao in order to preserve confidence and avoid legal consequences. However, the diversity of regulatory landscapes presents persistent problems, needing constant changes to shifting regulatory situations.

Some experts believe that regulating ride-sharing businesses too early may limit their ability to generate value, innovation, and jobs. Thus, it is proposed that regulatory measures be adopted at a later stage of development. However, there is still no agreement among manufacturers and service providers on automobile registration laws, namely if each platform should be permitted to register only one vehicle. Furthermore, when certain ride-sharing systems grow into other industries, concerns emerge regarding how governments can adequately categorize these new enterprises.

Meanwhile, unsolved concerns in the 2017 Rideshare Services Policy demand action. Disintermediation, in which drivers and commuters do transactions outside of the official app, has resulted in revenue losses for certain firms. This creates hazards to both platforms and users since drivers who operate autonomously are not accountable to the platform. While laws have been passed to prevent this practice, enforcement has been insufficient, enabling it to continue. Pathao has launched initiatives to oppose disintermediation, describing it as unlawful and damaging to their business. However, the public has had conflicting feelings about these initiatives, with some bike riders denouncing the campaign titled "Don't be a masud, don't khep, use Pathao app."

3.5. Competitive Environment

In the ride-sharing industry, competition is fierce between large competitors like Uber and Lyft, as well as local challengers like Pathao. Pricing strategies, service excellence, technological developments, and coverage areas are all hotly contested. Pathao distinguishes itself by providing a diverse range of services, including ride-sharing, meal delivery, and courier services. Furthermore, the corporation pays close attention to local tastes and customs, which has helped it maintain a strong position within its operational territories.

Early accomplishments in motorcycle ride-sharing were shared by Uber Bike, Pathao, and Shohoz Ride. Later on, my colleague and I inherited this heritage. While Uber is well-known for its cutting-edge technology and driver training, Pathao has significant brand awareness and an impressive early success rate. Platforms frequently provide discount vouchers in order to entice users, with

the goal of recruiting and maintaining customers. To remain competitive, organizations must transition to vertical services. However, new tactics might quickly exhaust investor capital. Pathao raised $10 million from investors in 2018, led by regional ride-sharing heavyweight Gojek, while Shohoz earned $15 million from Asia Golden Gate Venture. Unfortunately, Shohoz could not maintain itself in the long run.

3.6 Changes in the competitive Environment

To summarize, Pathao works in a dynamic and ever-changing business characterized by potential for expansion, regulatory barriers, and intense rivalry. Pathao is well-positioned to prosper in the ever-changing transportation and logistics industry by embracing technological innovations, responding to altering consumer expectations, and guaranteeing regulatory compliance.

Establishing and keeping client loyalty is a major problem for platforms in this market. Consumers frequently move between providers based on pricing, and they use many programs concurrently. Ride-sharing businesses now categorize drivers as independent contractors in an effort to save operating costs. However, this approach falls short of fully addressing the hazards connected with the ambiguous nature of the connection with drivers, as illustrated by recent occurrences such as Uber's prohibition in London over safety concerns. The dropping stock prices of ride-sharing firms throughout the world highlight the critical need to reconsider the business model's long-term sustainability.

Pathao, a $100 million Bangladeshi firm, suffered substantial losses when investors pulled their backing, resulting in significant downsizing and layoffs of mid- to upper-level staff. Meanwhile, another ride-sharing company, Obhai, has extended its services by including CNG auto rickshaws and applying fair pricing via its app, exhibiting market leadership. Additionally, while Shohoz dominates in online sales of bus, train, and launch tickets, rivals like as Uber and Pathao have entered the food delivery sector, broadening their products to meet changing customer expectations.

Chapter 4: Description of Main Duties and Job activities

4. Description of main duties and Job activities:

4.1. Streamlining Efficiency: A Deep Dive into Pathao Couriers' Inbound Process

Pathao Couriers, a premier logistics service provider, is committed to efficiency, dependability, and client satisfaction. One critical component of its operations is the incoming process, which collects goods from merchants, sorts them, and dispatches them for delivery. This essay digs into the internal workings of Pathao Couriers' incoming procedure, explaining the numerous processes and the rigorous attention to detail that insures smooth operations.

Stage 1: Parcel Pickup and Submission:

The procedure begins with pickup agents retrieving goods from shops. These agents are the first point of contact between Pathao Couriers and its customers. Once collected, packages are forwarded to the inbound crew. This transfer begins each parcel's operational journey.

Stage 2: Parcel Scanning and Sorting:

Upon reception, the incoming crew thoroughly scans each parcel and enters critical information into the system. This stage has several uses, including tracking, accountability, and inventory management. Following scanning, packages are classified linehall-wise by destination zone. Inside Dhaka Operations (ISD) are divided into lines A, B, C, and D, while Outside Dhaka Operations (OSD) are further divided into lines 1–12. Additionally, OSD fleets are assigned to suburbs such as Savar, Keraniganj, Gazipur, Mymensingh, and Narayanganj.

Stage 3: Creation of Parcel Sacks and Loading:

Sorted packages are then collected into bags and categorized by lines and fleets. This methodical approach speeds up the loading procedure into delivery vehicles. Each sack is precisely tagged to ensure accuracy and efficiency in shipment. The loading step symbolizes the shift from sorting to transportation, when items are readied for delivery to last-mile hubs.

Stage 4: Dispatch and Data Transmission:

While shipments are being loaded, critical data is transferred to the last-mile hubs. This comprises package data, route details, and delivery timetables. Pathao Couriers uses a multi-channel strategy to data sharing, using email for official communication and WhatsApp groups for real-time updates. Furthermore, all parcel data is posted to the Operations Management System, which gives stakeholders complete access and control over the whole process.

Pathao Couriers' incoming process emphasizes efficiency, accuracy, and innovation in logistics management. From parcel collection to last-mile delivery, every stage is painstakingly planned to ensure smooth operations and an exceptional customer experience. Pathao Couriers continues to create new standards in the logistics sector by adopting technology, automation, and simplified workflows, cementing its position as a reliable partner for both businesses and consumers.

PATHAO INBOUND PROCESS

Pickup Agent collects parcels from Merchants.
Parcels delivered to Inbound Team.

01.

Scan & Receive →

- Verification upon receiving an order
- Scans each parcel and Sticker Labeling

02.

Sorting →

- Inside Dhaka Operations (ISD): Lines A, B, C, D (based on zones).
- Outside Dhaka Operations (OSD): Lines 1-12 (based on regions).
- Sub-Urban Areas: OSD Fleet: 1-5 (based on area)

03.

Basketing →

- Parcels grouped into sacks based on sorting.
- Basket means the “Sacks” gets labeled.
- Line Hall Van wise loading.

04.

Data Dissemination →

- Parcel data sent to Last Mile Hubs via email.
- Parcel status updates shared in WhatsApp groups.
- Parcel data uploaded to Operations Management System.

4.2. Hub Visiting

During my internship, I had the opportunity to visit four hubs and the central warehouse.

4.2.1. Hazaribag Hub Visit

At the Hazaribag HUB, the day unfolds through three shifts: Morning, Evening, and Night. Each shift has specific tasks and responsibilities.

Morning Shift (Check-in Time: 7:30 am):

1. Scan Previous Day's Hold Parcels: Start the day by reviewing parcels held from the previous day.
2. Receive New Parcels: Accept incoming parcels from the Central Operations and Sorting Department (COSD).
3. Assign Parcels to Delivery Agents (DA): Organize parcels and assign them to the appropriate delivery agents while maintaining records in an Excel sheet.
4. Panel Assign (Hermes): Allocate parcels to designated panels using the Hermes system.
5. Assign Mail: Distribute mail parcels to the respective recipients.
6. Parcel Hold: Manage parcels that need to be held for specific reasons.
7. Parcel RTO (Return to Origin): Handle parcels that need to be returned to their origin, ensuring proper documentation on the panel.
8. Zone Change: Update zone changes in the Excel sheet for efficient tracking.
9. Reverse Parcel Separation: Differentiate and handle parcels marked for reverse logistics.
10. Hold Parcel Assignment (Office Name): Assign parcels to be held at specific office locations.
11. Morning Report: Generate reports for the Information Systems Division (ISD) team and the HUB, detailing morning operations.
12. HUB Report: Compile a comprehensive report on HUB activities.
13. Weight Dispensary of Panel: Ensure accurate weight recording for panel parcels.
14. Panel Solution: Resolve any issues or discrepancies related to panel assignments.

Evening Shift (Check-in Time: 2:30 pm):

1. Receive Cash from Delivery Agents: Collect cash payments from delivery agents.
2. Reverse Parcel Pickup: Scan and collect parcels marked for reverse logistics, then send notification emails.
3. Assign Reverse Parcel (PA): Allocate reverse parcels to the appropriate processing area.
4. Scan Hold Parcels: Record held parcels in the Excel sheet for tracking purposes.
5. Recon Solution: Double-check all parcel processing steps to ensure accuracy.
6. Pick-Up Request Collection: Gather all pick-up requests received throughout the day.
7. Export from Workplace Group: Transfer data and information from the workplace group platform.

Inbound Team Daily Tasks:

1. Receive Parcels from Pick-Up Agents (PA): Accept incoming parcels from pick-up agents.
2. Print Invoices: Generate invoices for received parcels.
3. Routing: Determine the optimal routes for parcel transportation.
4. Parcel Scanning and Spreadsheet Update: Scan received parcels and update the spreadsheet with relevant information.
5. Handover to Transportation Team: Transfer parcels to the transportation team for further distribution.
6. Van Agent Lot Sheet Check: Verify and review lot sheets provided by van agents.
7. Recon Solution: Double-check all processing steps to ensure accuracy.
8. Panel Assignment: Assign parcels to designated panels.
9. Central Check Out Report: Prepare a report detailing parcels checked out from the central system.
10. Line Haul Time Tracker Update: Update the time tracker for line haul operations.
11. Inbound Operations Evaluation Updates: Provide updates on inbound operations evaluations.
12. Pick-Up and Handover Report: Generate a report on pick-up and handover activities.
13. Line Haul Handover Report: Compile a report on line haul handovers.
14. No Entry Report: Document parcels that could not be entered into the system.
15. CSV Upload: Upload data files in CSV format.
16. Assign Parcels to No Entry Team: Allocate parcels that require handling by the no entry team.

4.2.2. Chittagong Hub Visit

During the 3 days visit to the Chittagong hub, several issues were identified:

1. Shortage of Space: It was observed that there's not enough space available at the hub. This shortage could potentially impact operations and the ability to efficiently manage incoming and outgoing shipments.
2. Timing Constraints for Van Entry: If the delivery van arrives late at the hub, it becomes challenging to cover all designated areas for delivery. This could result in missed deliveries and customer dissatisfaction.
3. DA Out Time: The deadline for the departure of delivery agents (DA) from the hub is set at 1 pm. Adhering to this schedule is crucial for ensuring timely deliveries and efficient workflow.
4. Change in Border Area: There seems to have been a change in the border area, which might affect logistics and transportation routes. It's essential to adapt to these changes to maintain smooth operations.

5. Pickup Time Adjustment for Elite Merchants: Elite merchants, presumably high-priority clients, require special attention regarding pickup times. Adjustments may be necessary to accommodate their schedules and maintain good relationships.
6. Office Delivery Challenges: Delivering to office addresses presents its own set of challenges, which need to be addressed. These may include restricted access, security protocols, or specific delivery time preferences.

Meeting with the DAs

Meeting with the PAs

Regular Line haul van dispatch

Addressing these findings will be crucial for optimizing operations, ensuring customer satisfaction, and maintaining efficient logistics management at the Chittagong hub.

4.2.3. Comilla Hub Visit

Based on the findings from my one week visits and training to the Comilla Hub and Sorting Hub:

Comilla Hub Visit Findings:

1. Parcel Status while Rider Assignment: When assigning a rider, the parcel status should show as "Received at LMH" and "On Hold".
2. Handling Damage Parcel: If a parcel is damaged, a ticket should be raised, and an email with the ticket ID should be sent to the IR (Investigation and Recovery) team.
3. Area Changing Routing: Area changes are processed at 11:00 AM.
4. Learning Area Change Assign Process: Understanding the process of assigning area changes.
5. Maintaining Logsheet: Keeping track of consignment IDs for area changes.
6. Requirement for Area Change: Parcels must be at the Last Mile Hub (LMH) for an area change to occur.
7. Parcel Tracking via Email: Monitoring parcels through email notifications for Line Hall, Area Change, and Reverse processes.

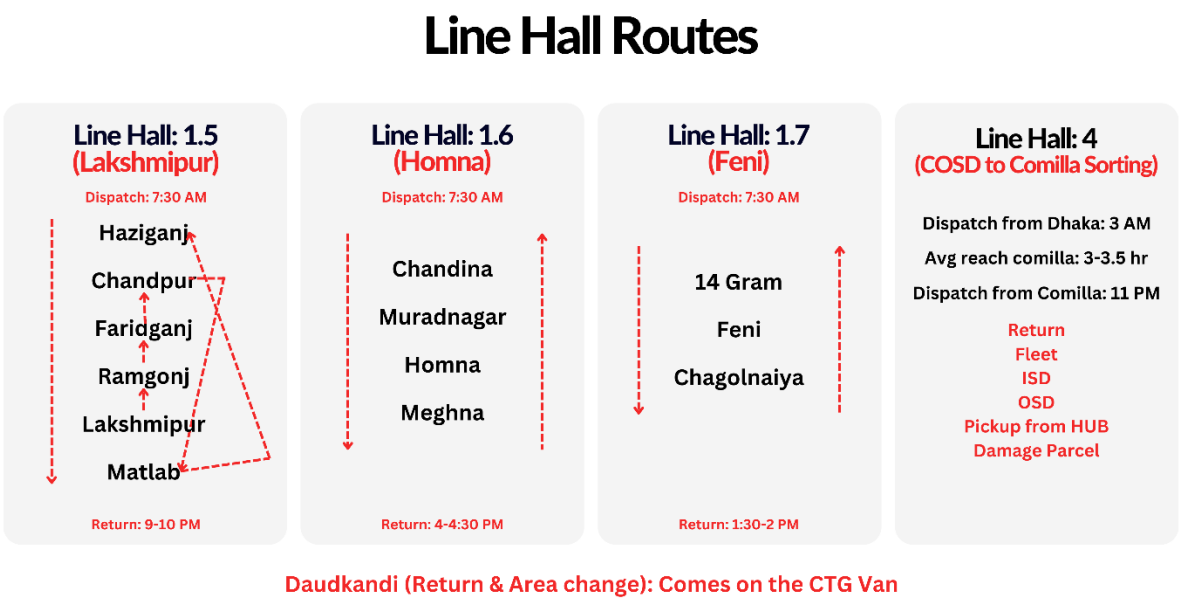
8. Examining Reverse/Area Change/Transfer Parcels: Includes cash collection, conducting exams, and handling cash collection discrepancies.
9. Early Morning Parcel Routing: Sorting and routing parcels early in the morning.
10. Parcel Scanning and Receiving: Scanning and receiving parcels.
11. Assigning Riders: Allocating riders to parcels.
12. Bringing Parcels to Comilla Hub: Using the IR panel to accept consignments, bulk hub selection, and acceptance.
13. Cash Collection Process: Examining cash collection, backlog, hold parcel verification, field marking, and aging processes.
14. Hold Parcel Verification: Verifying held parcels and contacting customers if necessary.
15. Return Parcel Process: Verifying return parcels and coordinating with merchants.
16. Exchange Parcel Process: Updating proof of delivery (POD), coordinating with merchants, and handling exchanges.
17. Mismatch Verification in Cash Collection: Checking for discrepancies in cash collection, exporting data, and cross-checking amounts.
18. E-Balance and Cash Handling: Prioritizing electronic balances before providing cash and completing payments by 11:00 AM.
19. Delivery Timeframes: Setting delivery timeframes for customers and merchants, with specific durations for return parcels.

Activities (Comilla Hub)

Comilla Sorting Hub Visit Findings:

1. Entry and Pickup Acceptance: Handling van entries, accepting pickups, and initiating sorting and sticker printing.
2. Assigning Parcels: Allocating parcels for processing.

3. Van Return and PA Assignments: Coordinating van returns and assigning personal assistants (PA) through WhatsApp groups.
4. Reverse Parcel Processing: Processing reverse parcels, including those directly processed and those needing sack creation.
5. Handling Damaged Parcels: Processing damaged parcels.
6. Total Reverse & Damaged Parcels: Noting the total number of reverse and damaged parcels.
7. Creating Reverse Consignment IDs: Generating consignment IDs for reverse parcels.
8. Removing Manual Entries: Removing manual entries of merchants from spreadsheets.
9. Handling Return Pending Parcels: Directly assigning parcels pending return from the hub.
10. Creating RE IDs: Creating RE IDs by removing the first 2 letters of consignment IDs.
11. Central Team Processing: Handling parcels that cannot have reverse IDs created due to specific conditions; these are managed by the central team.



Break down of each process involved in the routes covered by Comilla sorting:

1. Line Hall 1.5 (Lakshmipur):

- Haziganj: Packages from this area are collected and sorted.
- Chandpur: Packages from Haziganj are transported here for further sorting.
- Fasridganj: Sorting of packages collected from Chandpur continues here.
- Ramganj: Further sorting of packages is done in Ramganj.
- Lakshmipur: Packages destined for Lakshmipur are sorted out.
- Matlab: Packages for Matlab are sorted and prepared for dispatch.

2. Line Hall 1.6 (Homna):

- Chandina: Collection and initial sorting of packages occur here.

- Muradnagar: Packages from Chandina are transported here for further processing.

- Homna: Sorting continues at this point.

- Maghna: Packages designated for Maghna are sorted and prepared for dispatch.

3. Line Hall 1.7 (Feni):

- 14 Gram: Initial sorting of packages collected from this area.

- Feni: Packages from 14 Gram are transported here for further sorting.

- Chagolnaiya: Sorting of packages continues here before dispatch.

4. Line Hall 4 (COSD to Comilla Sorting):

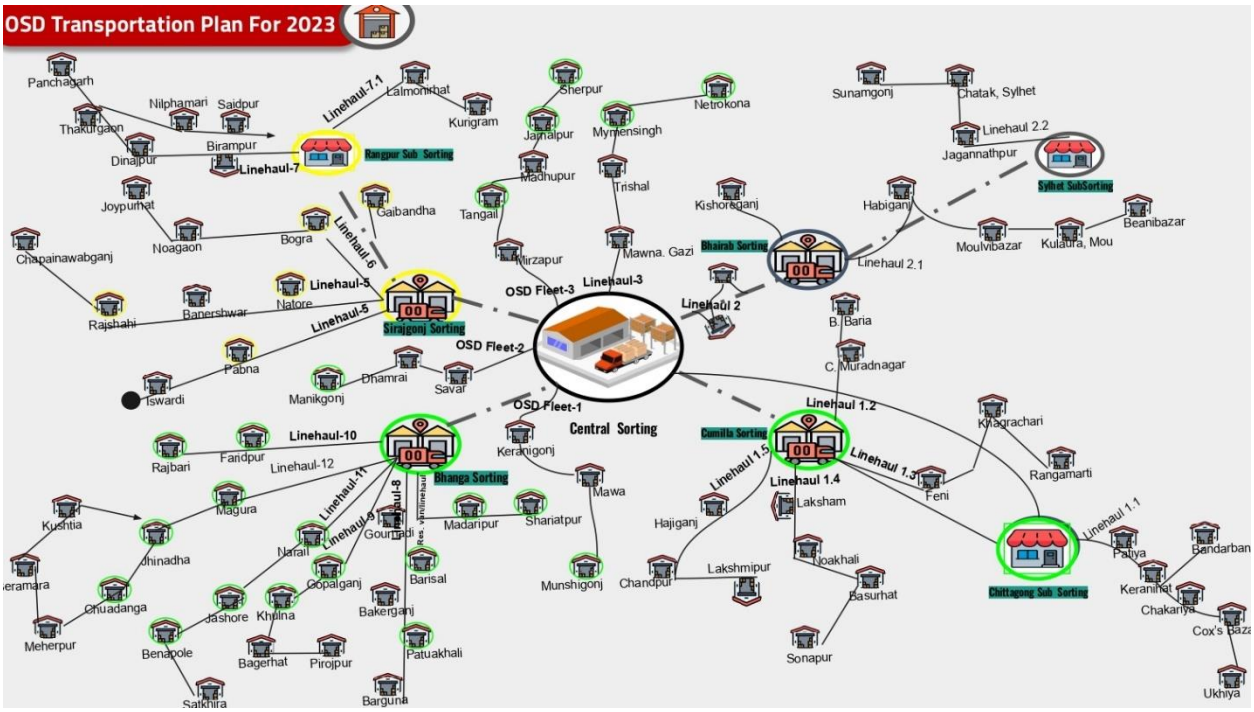
- Dhaka (Hazaribagh): Packages originating from Dhaka are collected and sorted.

- Comilla Sorting Hub: All sorted packages from Dhaka are dispatched to the Comilla Sorting Hub for further processing.

5. Daudkandi's Area Change and Reverse parcels:

- Chittagong Van: Parcels from Daudkandi with area changes or parcels meant for reverse dispatch are handled by vans destined for Chittagong.

Each step involves collecting, sorting, and transporting packages from one location to another, ensuring efficient handling and delivery to their respective destinations.



4.3 Flow of Operations Management System (Creating order to Cash collection)

1) **Order Creation:**
   a) Merchants create orders through their app, website, or via Hermes.
   b) They have the flexibility to create single or multiple orders, including dummy orders for testing purposes.

2) **Order Acceptance:**
   a) Orders are received and managed from the Pending Orders tab.
   b) Merchants review and accept orders from this tab.

3) **Pickup Assignment:**
   a) Pickup agents are assigned to accepted orders from the Pickup Orders tab.
   b) This ensures efficient scheduling and allocation of resources for pickup.

4) **Order Status:**
   a) Orders can have various statuses such as Picked, Failed, On hold, or Removed.
   b) These statuses indicate the progress and status of each order in the system.

5) **Processing and Labeling:**
   a) Unprocessed orders are labeled, and stickers are printed from the Processing tab.
   b) This step prepares orders for further handling and transportation.

6) **Transport to COSD:**
   a) Labeled orders are grouped into baskets and sent to the Central Operations and Sorting Department (COSD).
   b) A rider is assigned to transport the basket to COSD for further processing.

7) **Routing at COSD:**
   a) At COSD, the basket is scanned and opened for routing.
   b) A new basket is created for the Last Mile Hub, and labels are printed for further sorting.

8) **Transport to Sorting Hub:**
   a) An agent is assigned to transport the basket from COSD to the Sorting Hub.

9) **Sorting at Sorting Hub:**
   a) At the Sorting Hub, orders are sorted based on their destination and delivery routes.
   b) Agents are assigned directly from the Processing tab for Last Mile delivery.

10) **Last Mile Delivery Preparation:**
   a) At the Last Mile Hub, the basket is received from the routing.

b) The basket is opened, parcels are scanned, and further sorted for delivery.

11) Parcel Delivery:

a) Agents are assigned for parcel delivery based on their assigned routes.
b) The status of products can be tracked from the Run Route, indicating various outcomes such as Delivered, Partial Delivery, DRTO, On Hold, Return, Lost, Damaged, Price Change, Exchange, or Removed.

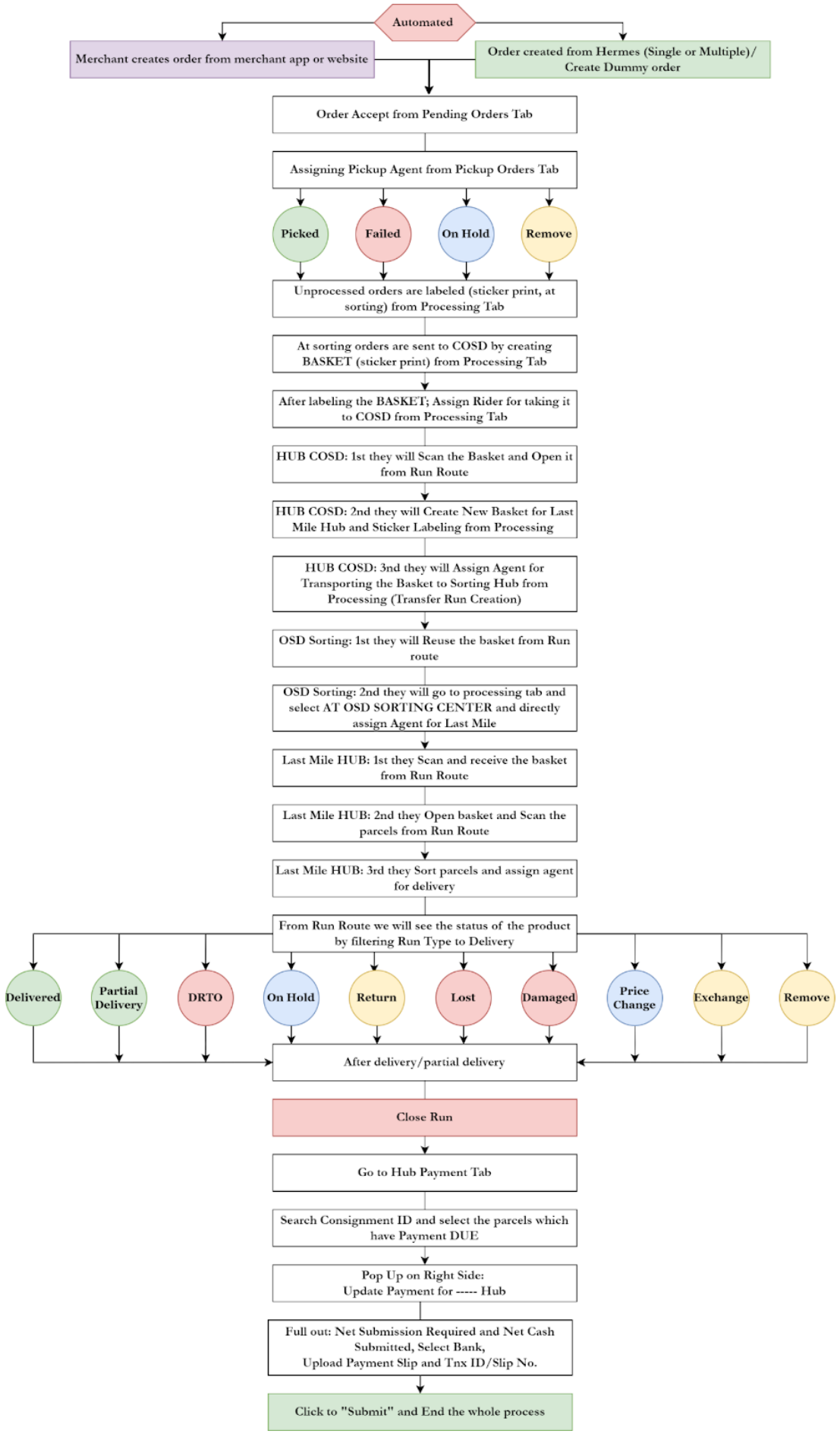
12) Run Closure:

a) After delivery or partial delivery, the run is closed, marking the completion of the delivery process for that particular set of orders.

13) Payment Processing:

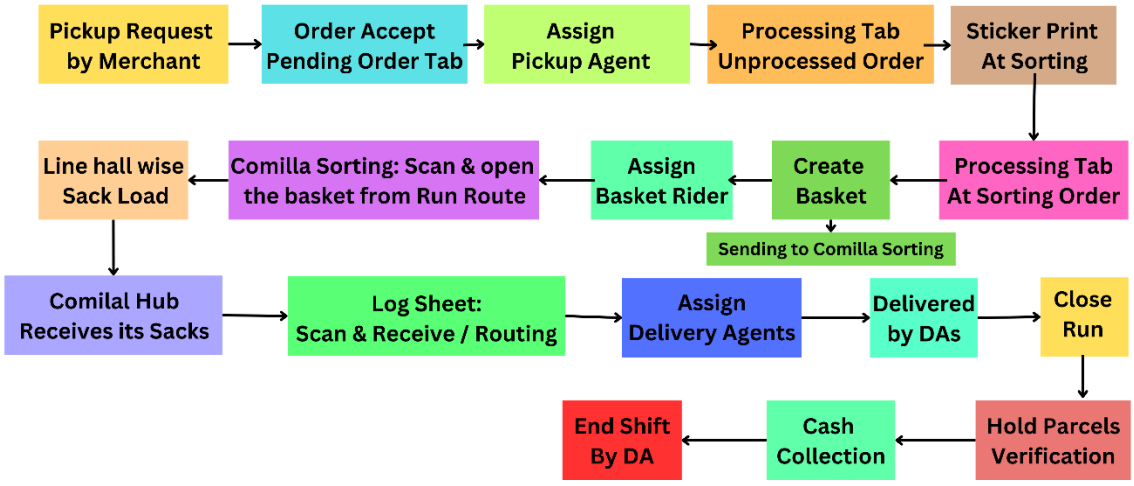
a) In the Hub Payment tab, consignment IDs are searched, and parcels with pending payments are identified.
b) Payment details are filled out, including Net Submission Required, Net Cash Submitted, selecting the bank, and uploading payment slips and transaction IDs.
c) Finally, the payment is submitted to complete the process, ensuring that merchants receive compensation for their deliveries.

This comprehensive process ensures smooth order management, efficient transportation, and timely delivery, culminating in seamless payment processing for merchants.


Automated
Merchant creates order from merchant app or website
Order created from Hermes (Single or Multiple)/ Create Dummy order
Order Accept from Pending Orders Tab
Assigning Pickup Agent from Pickup Orders Tab
Picked
Failed
On Hold
Remove
Unprocessed orders are labeled (sticker print, at sorting) from Processing Tab
At sorting orders are sent to COSD by creating BASKET (sticker print) from Processing Tab
After labeling the BASKET; Assign Rider for taking it to COSD from Processing Tab
HUB COSD: 1st they will Scan the Basket and Open it from Run Route
HUB COSD: 2nd they will Create New Basket for Last Mile Hub and Sticker Labeling from Processing
HUB COSD: 3nd they will Assign Agent for Transporting the Basket to Sorting Hub from Processing (Transfer Run Creation)
OSD Sorting: 1st they will Reuse the basket from Run route
OSD Sorting: 2nd they will go to processing tab and select AT OSD SORTING CENTER and directly assign Agent for Last Mile
Last Mile HUB: 1st they Scan and receive the basket from Run Route
Last Mile HUB: 2nd they Open basket and Scan the parcels from Run Route
Last Mile HUB: 3rd they Sort parcels and assign agent for delivery
From Run Route we will see the status of the product by filtering Run Type to Delivery
Delivered
Partial Delivery
DRTO
On Hold
Return
Lost
Damaged
Price Change
Exchange
Remove
After delivery/partial delivery
Close Run
Go to Hub Payment Tab
Search Consignment ID and select the parcels which have Payment DUE
Pop Up on Right Side:
Update Payment for ----- Hub
Full out: Net Submission Required and Net Cash Submitted, Select Bank,
Upload Payment Slip and Tnx ID/Slip No.
Click to "Submit" and End the whole process

4.4 Delivery Cycle

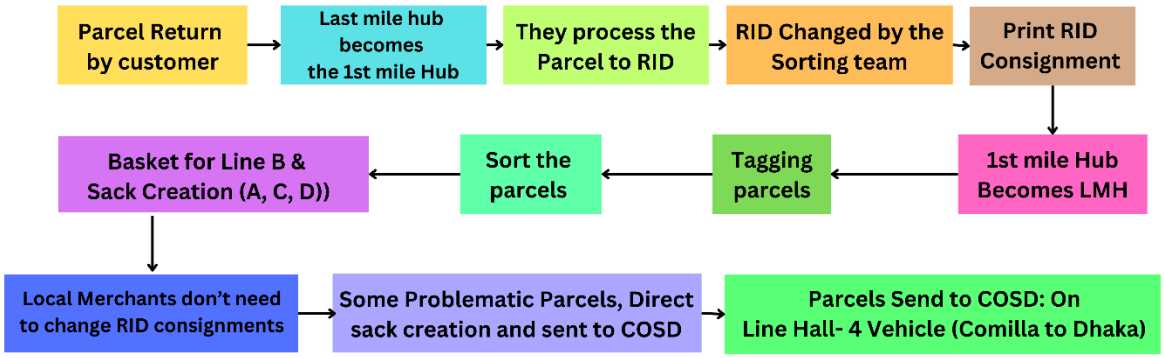
When a merchant initiates a pickup request, they provide details about the package to be picked up. The pending order tab displays the orders awaiting acceptance. Upon acceptance, the order moves to the processing stage. A pickup agent is assigned to collect the package from the merchant's location. Orders in the processing tab that haven't been processed yet are identified and prepared for further handling. At the sorting facility, stickers containing essential information about the package are printed and attached. The processed orders are sorted and organized in the processing tab according to their destination. Baskets are created to hold the sorted packages for efficient transportation. The sorted packages are sent to the Comilla sorting facility for further distribution. Baskets are assigned to riders for delivery to their respective destinations. In Comilla sorting, baskets are scanned and opened to access the packages for distribution along designated routes. Packages are loaded into sacks according to their designated line hall, streamlining the distribution process. The Comilla hub receives the loaded sacks for further processing and distribution. A log sheet is maintained to record the scanning and receiving of packages, ensuring accurate routing. Delivery agents are assigned to specific routes for efficient delivery of the packages. Delivery agents (DAs) transport and deliver the packages to their intended recipients. Once all deliveries are completed, the run is closed, marking the end of the delivery process. Parcels are verified to ensure accuracy and completeness before finalization. Cash collection is conducted for packages that require payment upon delivery. Delivery agents end their shift, concluding their duties for the day.



4.5 Reverse Cycle

When a customer decides to return a parcel, they initiate the process by contacting the shipping company or retailer to arrange for the return. Once the returned parcels arrive at the last mile hub, it transforms into the first mile hub where the initial processing takes place. At the first mile hub, the parcels are processed to assign them a Return Identification (RID) number. The Sorting team then reviews and may change the RID if needed to ensure accurate tracking and handling of the

parcels. After finalizing the RID, a consignment label with the RID is printed and attached to each parcel. The first mile hub, having completed its tasks, transitions back to being the Last Mile Hub (LMH) for further distribution. Parcels are tagged with appropriate routing and handling instructions to streamline their movement through the sorting process. The tagged parcels are then sorted based on their destination and other relevant criteria. Baskets are prepared for Line B parcels, while sacks are created for Line A, C, and D parcels to facilitate efficient transportation. For local merchants, there's a streamlined process where they don't need to change the RID consignments, simplifying their involvement. Parcels with identified issues or complexities are handled separately, with direct sack creation and forwarding to the Central Operations and Sorting Division (COSD). Parcels designated for COSD are sent via designated vehicles, such as the mentioned. On Line Hall with four vehicles transporting parcels from Comilla to Dhaka.



Chapter 5: Analysis

5. Analysis

5.1 Navigating the Dynamics of Pathao Couriers' Inbound Process

Pathao Couriers transformed Bangladesh's delivery scene. At the heart of its success is the sophisticated inbound process, which takes items picked up from merchants on their way to consumer pleasure. This essay digs into the data-driven components of Pathao's incoming operations, looking at how data analysis may improve efficiency and assure timely delivery.

Parameter	Fuzzy Sets (3-Point Likert Scale Linguistic Variables)	Description
Sorting Time	Fast (1), Medium (2), Slow (3)	Categorizes sorting time based on factors like number of parcels, complexity of sorting criteria.
Number of Scan Errors	Few (1), Moderate (2), Many (3)	Represents the number of errors encountered during the parcel scanning stage.
Outbound Delivery Delay Risk	Low (1), Medium (2), High (3)	Assesses the potential delay in parcels reaching outbound delivery routes based on factors like sorting time and scan errors.

5.1.1. Fuzzy Logic Rules:

Rule 1: If Sorting Time is Fast and Number of Scan Errors is Few, then Outbound Delivery Delay Risk is Low.

Rule 2: If Sorting Time is Medium and Number of Scan Errors is Moderate, then Outbound Delivery Delay Risk is Medium.

Rule 3: If Sorting Time is Slow or Number of Scan Errors is Many, then Outbound Delivery Delay Risk is High.

5.1.2. Fuzzy Logic Explanation:

This table showcases fuzzy sets assigned to parameters like sorting time and scan errors. These sets use linguistic variables (Fast, Medium, Slow, Few, Moderate, Many) to represent imprecise values. Fuzzy rules then combine these sets to determine the outcome (Outbound Delivery Delay Risk). This allows for a more nuanced approach to managing the inbound process by considering the interplay of various factors.

5.2 Truth Table

Over 2000 Parcel Delivery data has been calibrated through Fuzzy Logic for generating the truth table:

SoT	NoSE	ODDR	number	raw consist.	PRI consist.	SYM consist
1	1	1	1298	1	1	1
1	1	0	456	1	0	0

1	0	0	152	0	1	0
0	1	0	33	0	0	1
1	1	0	60	0	1	0
0	0	1	1	1	0	0
1	0	1	0	0	0	0
0	1	1	0	0	0	0

5.2.1. Pickup and Sorting:

Data on pickup timings, package quantities, and sorting times might help identify bottlenecks. Analyzing previous data might help you estimate peak hours and deploy resources accordingly. For example, if a certain zone frequently has high volumes at certain times, sending more pickup agents can help to simplify the process.

Day	Zone	Number of Parcels Picked Up	Average Pickup Time (minutes)	Average Sorting Time (minutes)
Monday	Dhaka North	500	3	2
Tuesday	Dhaka South	720	4	2.5
Wednesday	Chittagong	380	2.5	1.5
Thursday	Sylhet	210	3.5	2
Friday	Khulna	450	2.8	1.8

5.2.2. Scan Errors and Quality Control:

Data on the frequency and types of scan mistakes might help identify areas for improvement. Identifying repeated mistakes may suggest problems with barcode quality, scanner malfunction, or even training deficiencies. Addressing these concerns through equipment maintenance, enhanced barcode printing, and focused staff training may drastically minimize delays while ensuring data correctness.

Day	Total Scans	Number of Scan Errors	Error Type	Root Cause (assumed)
Monday	1000	15	Incorrect Barcode	Printing issue
Tuesday	1440	8	Parcel Damaged	Improper handling during pickup
Wednesday	760	3	Missing Parcel ID	Data entry mistake
Thursday	420	5	Scanner Malfunction	Requires maintenance
Friday	900	10	Unreadable Barcode	Worn-out label

5.2.3. Real-time Data Visibility:

Equipping pickup agents with mobile applications that record data in real time might yield useful insights. This information may contain GPS coordinates, parcel weights, and potential damage

reports. Real-time visibility enables dynamic route optimization, resulting in efficient parcel distribution to delivery vehicles and reduced wait times.

Parcel ID	Pickup Location (GPS)	Weight (kg)	Potential Damage (Y/N)
DR24*G6WHLS**	23.78 N, 90.40 E	1.5	N
RE090*54UNQQ**	24.90 N, 91.87 E	3.2	Y (Minor scratch)
RO210*TCRWH**	22.34 N, 91.01 E	0.8	N

5.3 Predictive Analytics:

Historical data on sorting times, traffic patterns, and weather conditions may be used to do predictive analytics. This enables Pathao to predict future delays and connect with merchants and consumers more effectively. For example, if heavy rain is expected in a particular location, delivery routes might be changed to reduce delays.

5.4 Performance Measurement:

Data analysis is critical for determining the performance of the incoming process. Key data include average package sorting time, on-time collection rates, and first-scan success rates. Tracking these data over time enables Pathao to discover areas for improvement and carry out targeted actions.

5.5 Comparative Analysis of DTDC (India) and Pathao Couriers' Inbound Processes

The inbound process plays a crucial role in the seamless operation of courier services, facilitating the efficient handling and delivery of parcels. In this essay, we will conduct a comparative analysis of the inbound processes employed by DTDC and Pathao Couriers, two prominent players in the logistics industry. Through this analysis, we aim to explore the similarities, differences, strengths, and weaknesses of their respective inbound processes.

DTDC, a well-known courier business, has a robust incoming process to guarantee that shipments are handled quickly and securely. Typically, the process includes picking up parcels from merchants, categorizing them depending on destination zones, scanning them for tracking, and dispatching them to last-mile hubs. DTDC prioritizes accuracy, dependability, and prompt delivery across its inbound operations. Pathao Couriers, another major participant in the logistics industry, has an efficient incoming procedure that includes attentive package handling and innovative technology integration. Pathao Couriers, like DTDC, uses an incoming procedure that includes parcel pickup, scanning, sorting, and delivery. However, Pathao Couriers underlines the necessity of real-time data analytics and new solutions for improving operational efficiency. Both DTDC and Pathao Couriers consider package pickup, scanning, sorting, and dispatch to be critical components of their incoming procedures. In addition, both organizations use technology to track packages, manage inventories, and improve route planning. Both organizations appreciate the importance of fast and correct delivery in increasing customer satisfaction and loyalty. While both organizations use comparable steps in their inbound operations, there are significant variances in

their approach and execution. Pathao Couriers, for example, places a high value on real-time data analytics and communication, using platforms such as WhatsApp to provide quick updates. In contrast, DTDC may rely on more traditional modes of communication and data management.

5.5.1. Key Differences:

Constraints	DTDC	Pathao Courier
Target Audience	Caters to businesses and individuals with a wider range of delivery options, including international shipments.	Focuses on businesses and individuals within Bangladesh, specializing in fast and on-demand local deliveries.
Delivery Speed	Offers standard and express delivery options, depending on the distance and desired speed. Express deliveries can take as little as 24 hours for major cities.	Known for its fast delivery times, particularly in Dhaka and other metropolitan areas. They offer express delivery within 4-6 hours and standard delivery within 24-72 hours.
Network Coverage	Has a wider network internationally, serving international shipping to many countries.	Currently, their network covers all districts in Bangladesh for home delivery but their on-demand parcel service is available in major cities like Dhaka, Chittagong, Sylhet, Khulna, and Rajshahi.
Pricing	Pricing varies depending on the size, weight, distance, and chosen delivery speed. It can be generally considered more affordable for heavier parcels or international shipments.	Pricing usually depends on the distance and delivery speed.
Additional Features	Offers cash on delivery (COD), live tracking, insurance, and other value-added services.	Provides live tracking, COD, 24/7 customer support, and customized corporate services.
Overall	Ideal for businesses or individuals needing wider network coverage, international shipping, or affordable bulk deliveries.	Perfect for individuals or businesses within Bangladesh wanting fast and reliable local deliveries, particularly in major cities.

5.6 Professional level Analysis

During my internship, I was given a variety of duties that allowed me to refine a variety of talents that would be useful as I advance in my career. One important aspect was corporate communication. I communicated with a variety of stakeholders, both locally and outside Dhaka, honing my communication skills while navigating varied conventions and expectations. Attending core operations meetings introduced me to strategies, difficulties, and future prospects, which helped me improve my organizational communication skills greatly. Networking was another critical component. Participating in the internship program broadened my professional network, connecting me with people from many industries. Presenting Pathao Limited in transactions allowed me to interact with people from many industries, establishing new connections and ways to retain contacts. Pitching, an important skill for any business graduate, was also honed. Through generating presentations and working in the operations department, I learned effective selling strategies and how to build engaging brand narratives, which improved my ability to convey value to clients. Time management became critical as I juggled several tasks with deadlines. Meeting Pathao Limited's deadlines needed effective time management, which was further refined. During the internship, obstacles such as adjusting to the logistics business and traversing multiple hubs were solved with the assistance of helpful coworkers and prior academic expertise in supply chain management. These learned skills are crucial in my career experience, augmenting the theoretical information I received during my BBA education. For example, principles like Kaizen were used, with feedback loops insuring continual improvement in work results. Observing and implementing operational plans based on data analysis offered a realistic comprehension of management theory. Overall, the internship provided me with not just practical skills but also the opportunity to apply academic knowledge in real-world circumstances, establishing a solid basis for my future professional aspirations.

Chapter 6: Recommendation and Conclusion

6. Recommendation and Conclusion

6.1 Challenges and Considerations:

Data analysis is a powerful instrument, but it is not without its challenges. Data quality is critical. Inaccurate or incomplete data may result in erroneous conclusions. Pathao must invest in effective data collection and validation techniques. Furthermore, data security is crucial. Implementing appropriate cybersecurity measures ensures that sensitive consumer and company information is protected.

6.1.1.The Road Ahead:

By embracing data analysis, Pathao Couriers can navigate the dynamic landscape of the inbound process. By leveraging data-driven insights, Pathao can:

1. **Optimize resource allocation:** Ensure the right personnel and equipment are available at the right time.
2. **Reduce operational costs:** Streamline processes and minimize errors.
3. **Enhance customer satisfaction:** Improve delivery timeliness and communication.
4. **Gain a competitive edge:** Continuously improve efficiency and service quality.

Data analysis is more than just a tool for Pathao Couriers; it is the gasoline that drives its incoming process to greatness. By leveraging data, Pathao can provide its consumers with a seamless and efficient delivery experience, cementing its position as a leader in Bangladesh's thriving e-commerce market.

6.2 Recommendations for Enhancing Pathao Courier's Inbound Process:

1. Streamline Parcel Pickup Process: Pathao Courier should optimize the packet collection procedure to reduce delays and increase efficiency. This might include employing advanced scheduling algorithms or route optimization approaches to assure parcel pickup and submission on time.
2. Enhance Parcel Scanning and Sorting: Investing in modern scanning technologies and automated sorting systems will help to simplify the entering process. By decreasing manual intervention and human mistake, Pathao Courier can increase package processing accuracy and efficiency.
3. Implement Real-Time Tracking: Providing real-time tracking for packages may improve transparency and consumer happiness. Customers should be able to trace the progress of their packages from pickup to delivery, giving them peace of mind and decreasing calls to customer service.
4. Training and Development: Incoming crew members should get ongoing training programs to ensure they have the essential skills and expertise to handle shipments properly. This may involve training in scanning operations, sorting techniques, and customer service etiquette.

5. Regular Process Audits: Regular audits of the inbound process can help uncover bottlenecks and opportunities for improvement. Pathao Courier can prevent problems and enhance operations by assessing key performance indicators such as pickup times, sorting accuracy, and dispatch efficiency.

6.3 Conclusion

Pathao Courier's success in the logistics sector is not just about transporting items from point A to point B; it is also about the devotion and enthusiasm of the individuals involved at every stage of the process. Pathao Courier stands out for its human touch, from the pickup agents who greet each store owner with a smile to the diligent sorters who ensure every parcel is in the correct location. Pathao Courier has met and surpassed client expectations by focusing efficiency, accuracy, and innovation. However, it is not only about numbers and statistics; it is also about the tales that accompany each delivery. It's the birthday present that comes on time, the emergency medical supplies that save lives, and the small enterprises that prosper because of dependable logistics.

Looking forward, there is always space for development. By investing in technology, training, and feedback systems, Pathao Courier can continue to evolve and adapt to the ever-changing logistics industry. At its foundation, Pathao Courier's inbound process is actually successful because of the people—dedicated staff, helpful supervisors, and delighted clients.

As we wrap off this tour of Pathao Courier's operations, remember that it's about more than simply parcels and packages—it's about the relationships we build, the communities we serve, and the influence we have on people's lives. In that sense, Pathao Courier is more than simply a logistics provider; it's a lifeline, a friend, and a future partner.

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