

An Internship Report on “Existing infrastructure & Adaptability of new technology regarding Risk and Fraud Management in the online delivery platforms: A study on foodpanda Bangladesh”

Submitted By

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18104130

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

BRAC Business School

BRAC University

December 2022

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Letter of Transmittal

December 25, 2022

Dr. Mohammad Enamul Hoque
Assistant Professor,
BRAC Business School
BRAC University

Subject:

Dear Sir,

With due respect, it is a pleasure for me to present the report on “*Existing infrastructure & Adaptability of new technology regarding Risk and Fraud Management in the online delivery platforms: A study on foodpanda Bangladesh*” under the Service Operations Department of foodpanda Bangladesh.

Working in the Service Operations Department with such a dedicated team who actively works for foodpanda Bangladesh is a great opportunity for me. During my internship period, I attempted to acquire as much information as possible in order to convey essential data while keeping in mind the company's terms and regulations to complete my report. I tried my best to follow your recommendations and guidelines in every aspect of the report's preparation. I am thankful for your guidance during the preparation of this draft of the report. I hope you will appreciate my effort. I finished the report and did my best to execute it professionally.

I am extremely grateful to you for your guidance and kind operation on this report. I would be grateful if you kindly go through my report and evaluate my performance considering the limitations of the study.

Yours Sincerely,
Shihab Rahman
ID: 18104130
BRAC Business School
BRAC University

Declaration of Authorship

I, Shihab Rahman, certify that:

This internship report on ***“Existing infrastructure & Adaptability of new technology regarding Fraud and Risk Management in the online delivery platforms: A study on foodpanda Bangladesh”*** has been substantially accomplished during enrolment in this degree.

This report does not include any information that has been submitted to any universities or other postsecondary institutions in my name for the award of another degree or diploma.

In the future, no part of this report will be used in a submission in my name, for any other degree or diploma in any university or other tertiary institution without the prior approval of BRAC University and where applicable, any collaborative institution responsible for the joint award of this degree.

Unless otherwise noted in the text, this report does not contain any previously published or written by another individual content. No one's copyright, trademark, patent, or other rights are violated or infringed in this report.

This report does not contain work that I have published, nor work under review for publication.

Yours Sincerely,

Shihab Rahman

ID: 18104130

BRAC Business School

BRAC University

Shihab Rahman

18104130

Supervisor's Full Name & Signature:

Dr. Mohammad Enamul Hoque

Assistant Professor,

BRAC Business School

BRAC University

Acknowledgement

At the very beginning, I would like to thank the Almighty Allah for all His blessings that helped me to complete this report successfully.

I would also like to thank everyone who kindly provided me with information and guided me in making this report. I would like to thank BRAC Business School and all the faculties and mentors for enlightening me for 4 years of my Bachelors in Business Administration.

I would like to thank Mohammad Enamul Hoque, Assistant Professor, BRAC Business School, BRAC University for providing me with the proper guidance to complete the internship report. I am also indebted to all my colleagues and staff members of the Service Operations Department of foodpanda Bangladesh who kindly spared me much of their precious time by giving me support and information.

Finally, I would like to express my special thanks to my family members and friends who supported me during this period of internship.

Executive Summary

In this age of digitalization, almost every service has moved online and food and grocery delivery services are one of those services. However, these businesses have become exposed to a lot of unusual threats that the physical grocery shops did not have to face. The way of dealing with fraudulent acts and customers has become more of a challenge than it ever was. This report aims to find out the implications that risk and fraud management has on online grocery shops and similar businesses by finding out the threats that fraudulent customers and acts pose against these businesses. The report analyzes the survey data and the observations from foodpanda Bangladesh by the student preparing the report in order to find out how the fraudulent customers can pose threats by exploiting online grocery businesses.

Chapter one describes the overview of the company and the outcomes of my internship tenure. *Chapter two* describes the organization and its different aspects, including its organizational structure, background of the major departments and its mission and vision. Additionally, Chapter two also highlights three methods to find out the company's competitiveness. The current fraudulent frequencies in the foodpanda Bangladesh, including the frequency that we can notice in the MFs and Banking sectors, are described in *Chapter Three*. It also describes the methods or algorithms used by foodpanda Bangladesh, as well as in the MF and Banking sectors, to gather and analyze the data necessary to detect fraudulent activities. To add, this chapter also concludes the paper by discussing the limitations of the current approaches for detecting foodpanda fraud activities, as well as recommendations for new technology adaptability to improve the current algorithms.

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Chapter 1: Overview of Internship

1.1 Student Information

Name: Shihab Rahman

ID: 18104130

Program: Bachelor of Business Administration (BBA)

Major: Marketing

1.2 Internship Information

1.2.1 Company Information:

Company Name: foodpanda

Period: 9 months

Department: Service Operations

Address: Kaderia Tower, Mohakhali C/A, Dhaka- 1212

1.2.2 On-site Company Supervisor's Information:

Name: Mir Mustafizur Rahman

Designation: Performance Lead

Email Address: mir.rahman@foodpanda.com.bd

Contact Number: +8801754536826

1.2.3 Job Scope – Job Description/Duties/Responsibilities:

I have served as a service recovery specialist for foodpanda. In foodpanda, service recovery specialists are a part of their level 2 customer service (*Level 2 customer service refers to a team who handles rare and unfortunate events by contacting the customers directly*). In subsequent chapters, the paper will provide detailed information regarding the various customer service team levels. I joined foodpanda on the 8th of November, 2021.

When it comes to employee career choices, opportunities for training and growth are crucial. Despite its significance, many job satisfaction studies do not include a "satisfaction with workplace training" component, and many job satisfaction survey instruments do not include a "satisfaction with workplace training" component (Steven W. Schmidt, 2007). Each employee working with the service operations team needs to go through a 36-hour long training process. Each of the three teams has its respective trainers. As I have worked with the customer service team, I was trained by the customer service trainer, Maruf Hossain Shanto. The training tenure is divided in a way so that the whole training process can be completed within a week. Each employee of the service operations department has a daily work hour worth six. Only the full timers who have a permanent position in the company have a full-time work schedule, which is 9 hours long. As a part-timer, my training program was completed within a week. The training process consisted of theoretical learning of the basic and advanced SOPs and short exams which determined whether we can apply the standard operating policies perfectly or not. After the 36-hour long training process was completed, the shadow sessions followed, and live sessions

after that. The shadow sessions and the live sessions are special projects consisting of tenured 24 specialists. After the shadow session and the live sessions, which lasted almost a month, I joined and started working as a service recovery specialist.

The general duties and responsibilities were:

1. Calling the customer and confirming the issues and gaining elaborated details and information about the issue if necessary.
2. Investigating the past contacts made by the customer to our customer service team in order to get resolution for the issue.
3. Checking whether the Level 1 team was able to serve the customers by following the policy correctly or not.
4. Taking proper actions to try to compensate for the problem occurred.
5. If the customer is not satisfied with just the compensation, informing the relevant department about the issue caused and informing customer of what action is being taken from our end.
6. Also, checking the customer's order and refund history thoroughly using in house tools before giving any refund for any issues.
7. Coordinating live orders so that delays are minimized and the confusion is negated.
8. Contacting vendors about their policies and item details in order to remove confusions and to coordinate with the refund policy.
9. Guiding customers through the complicated processes of the app, website and newly launched campaign or policies of foodpanda if necessary.
10. Answering customer security concerns and taking security measures if the customer faces security issues with his/her information or data.
11. Flagging application issues and online payment issues to the regional team in order for the issues to be solved via the technical team and app support team.
12. Besides, if any customer faces any severe or any kind of issues with our riders then flagging it to our Rider Compliance Department to take necessary actions immediately.
13. Collaborating with the leadership team in order to provide the customers with ultimate resolution by following the SOPs, which are mainly the company's terms and conditions,

are offered by the regional customer service department and are updated quarterly in accordance with the most recent, frequent and new problems.

The mentioned are the duties and responsibilities that I had to undertake as a Service Recovery Specialist.

1.3 Internship Outcomes

1.3.1 Student's contribution to the company:

My tenure with foodpanda started with the service operations department. However, the service operation department communicates with partners, riders, and customers. The main aim of the department is to provide the concerned parties with proper service and support. To partners, the support comes in the form of assistance and technical support. To riders, the support comes in the form of guidance and specified instructions. Lastly, to customers, comes in the form of post purchase service and investigation of the issues faced by the customers.

I have worked diligently and conscientiously to complete all of the aforementioned responsibilities and duties as an employee of foodpanda's service operations team. As for the tasks assigned and special projects, I was assigned with numerous internal cases throughout the months. Internal cases are manual support tickets created by the leadership team in order to fix and track an issue without a support request from the customer. **The internal cases are usually affiliated with VIP customers including foreigners and corporate clients of foodpanda.** Even though service recovery specialists treat each case with utmost care, the internal cases that are created to help out VIP customers and corporate clients have a different type of urgency. Internal cases are not very common in customer service teams. They are usually created upon rare occasions where the mentioned types of customers face severe issues. Usually, this sort of situation does not arise as the orders and services provided to the VIP customers and corporate clients are organized with proper care and supervision. So, when an internal case is created, the leads assign the case to the

most tenured agent or to the agent with the highest performing quality scores to serve these VIP customers with proper care.

1.3.2 Benefits to the student:

As already mentioned, I worked as a service recovery specialist in the service operations department of foodpanda Bangladesh. I was a part of the service recovery team, which was included in the customer service branch of the department. I consider being able to work with foodpanda a lucky encounter. My experience with this team has been extremely professional and valuable. I was able to understand and learn a lot of things about the corporate culture and certain qualities that are needed in the workplace. Being able to work with a team consisting of 10 to 20 members taught me a lot about teamwork in the workplace. For instance, how to handle aggressive customers and work pressure. There is a lot of stress on the customer support crew during festivals and holidays. However, working alongside 10–20 other people and learning from one another how to handle such pressure and mentor the new hires accordingly greatly aided my personal growth. Relating this experience with the experience I gained from my 4 years at university, the experience with foodpanda Bangladesh enhanced the experience that I got at my university. Here are the rundowns of the beneficial aspects and advantages of my time spent working at foodpanda:

1. **First-hand experience with corporate grooming:** foodpanda Bangladesh is one of the most student-friendly corporations in Bangladesh and certainly is one of the best places to gain some corporate experience. Starting from the recruitment and training process up to the present almost everything was a learning experience for me. The recruitment and training process showed me how to adjust to a new workplace and how the new recruits are groomed by the company in order to fit their needs. From my experience, the training process was friendly and helpful to my actual responsibilities. Being able to train under one of the corporate trainers has been an experience that I will have to repeat in my future career. As a first-hand experience, I really appreciated how the trainer was friendly and helpful to all the new recruits.

2. **Self-motivation for reaching the monthly incentive goal:** My work quality was evaluated every month and based on that, the employees such as myself were entitled to a KPI bonus. Even though the KPI bonus contained a lot of criteria like work hours, and support tickets solved, the quality of the service mattered over all else. The quality score can vary from 0 to 100%. Achieving a score of 90% or more than 90% results in a full KPI bonus for the month. Having to perform consistently was a scope to learn how an organization can keep its employees motivated throughout the work period. I've been motivated by the possibility of obtaining the incentive by keeping up my own consistent quality performance.

3. **Personal growth and leadership value:** The leadership quality learned from this experience was also valuable as it helped me on my personal growth and to handle things under pressure. Being able to take charge of the new recruits and guide them to proper corporate culture was a proper experience to have. Being able to take the lead was overall a proper experience to learn leadership qualities. This experience has created an urge to test myself in leadership positions. As a result of my work experience, however, I am now a more self-confident and collected individual who is able to efficiently manage his own workload after having led others in their activities.

4. **Communication and interpersonal skills:** The biggest thing to take away from this experience was client handling and customer retention skills because I had to communicate with a lot of individuals, restaurants, and sometimes just a few riders and their problems during my entire work experience. Referring back to the tough experiences that I had to face with extremely dissatisfied customers and clients, being able to solve their issues and communicate with them and recover them was a big win for me and it taught me a lot about client handling. The need and importance of situational knowledge and street smarts in a service-based business was another thing that I realized working here. Adding to that interpersonal skills such as speaking clearly with a professional tonality, listening attentively, communicating effectively, making justified decisions, showing empathy, and so on were among the many things I picked up from this experience.

1.3.3 Problems/Difficulties (faced during the internship period):

In this piece, I'll highlight the constraints I encountered during my tenure in the workplace and while assisting customers-

1. First, I had a hard time balancing my job and my academics when I first started working because of the fluid work schedule which also created pressure. Since most of the employees in the service operations are students so the work time is not fixed and it changes after 3-6 months depending on the academic schedules of other employees.
2. We have a good understanding of what our customers are going through because we deal with all of their complaints about the service they received with their orders, with the restaurants, or even with the riders. However, because the service operation department is in a relatively inferior position to the management, we are unable to immediately implement our insights or any strategies for improving the situation and thereby boosting customer satisfaction. As a result, the deployment of that specific change will probably be somewhat delayed if the issue happens frequently enough to affect service.
3. In addition, company policies require us to adhere to certain restrictions. Consequently, a customer satisfaction gap exists in which we are unable to consistently meet consumers' needs, resulting in the loss of potential customers.
4. Adding to that, occasionally, I was obliged to deny customers despite the fact that their evidence was solid, but as per company policy and due to certain parameters, these customers were flagged as "Fraud" for their recent order activities, which is also a contributing factor to the deterioration of customer satisfaction.

1.3.4 Recommendations:

It was a great opportunity to work for arguably the biggest food service organization in the world and to learn how they operate as an entity. However, in the coming days, a few things should be emphasized in order to improve the service. It would be beneficial if management set aside time each month to hear from us as individuals working in service operations must contact customers, restaurants, and occasionally even riders. This would give us a chance to discuss the challenges we've encountered and suggest ways forward. And this access to approaching the management with our own words can have a positive impact when it comes to fulfilling customer satisfaction.

On the other hand, foodpanda Bangladesh has a huge scope to expand its services to newer sectors of the country. foodpanda Bangladesh also needs to solve issues like delays with orders as this is one of the most common reasons for customers being dissatisfied. As a result, if the company puts more effort into just a couple of these areas, it might make a big difference.

Besides, foodpanda needs to recruit more riders and train them properly like how to behave decently with customers. Adding to that, the company should expand their delivery zone since the demand for the food delivery service is increasing.

Lastly, foodpanda should take necessary steps and educate all the vendors regarding proper packaging and discuss the way of handling the orders to the riders as we often get complaints from customers regarding item spillage. Additionally, the company should follow up with vendors regarding concerns such as wrong or missing items in order to minimize these issues.

Chapter 2: Organization Part

2.1 Introduction



While the concept of delivering food and groceries is not new, most previous services have been offered only by individual restaurants and grocery stores, or by restaurants and grocery stores working together like Walmart. The first-ever recorded digitized food delivery service that was not exclusive to certain restaurants and super shops was a company called "World Wide Waiter". It was founded in 1995. However, the company did not last as the internet was not available everywhere like it is today. But in the 2010s, when the internet became a basic necessity, a huge number of online services were introduced to the world market. foodpanda is one of the modernized and arguably the most famous food delivery service brands in the world. Without doubt, foodpanda is a known name in all over Bangladesh and Asian region. Starting in 2013, foodpanda has not stopped growing and has expanded its horizon to many countries, Bangladesh being one of them. Bangladesh has been an important destination for foodpanda as Bangladesh is one of the highest grossing branches of foodpanda till now.

Most of the food and grocery delivery services that we know today were founded in the 2010s. foodpanda is one of them. The company is owned by Delivery Hero, which was founded in 2011 in Berlin, Germany. Delivery Hero itself is a food delivery company that operates in Europe, Asia, Latin America, and the Middle East. As of today, the company is partnered with more than

half a million restaurants all over the world. foodpanda is one of the subsidiaries of this very company. foodpanda operates mainly in Asian countries and is the largest food delivery service in the continent of Asia. foodpanda operates in Bangladesh, Cambodia, Germany, Hong Kong, Hungary, Japan, Laos, Malaysia, Myanmar, Pakistan, Philippines, Singapore, Slovakia, Thailand, and India as of now. Without a doubt, it is the biggest food delivery service in Asia right now. Food delivery services have been one of the easiest technologies to use in recent times. Furthermore, it is quite helpful and time-saving as before it was introduced, people had to purchase food themselves and it took quite a bit of time. The previous practice was not efficient at all. Currently, these services have changed the game for both consumers and restaurants. The introduction of this service helps the consumers to save a huge chunk of their day-to-day time and boosts the sales of the restaurants that are featured in the delivery services. Bangladesh is one of the countries that are comparatively new to the restaurant trend. Even though western countries had restaurant-going traditions and practices, Bangladesh, which was until recently a third world country did not have such traditions or practices. However, starting from the early 2010s, Bangladesh saw a sudden rise in the number of restaurants. Among all the places in the country, Dhaka became a hub for new and fashionable tastes. With this growing number of restaurants, Bangladesh became one of the important locations for foodpanda to set sail to. Ralf Wenzel has been the only CEO of the company so far. He was appointed back in 2013 when the company was first founded.

2.2 Overview of the Company

In December 2013, foodpanda started its journey in Bangladesh. At first, the operations were relatively smaller. Gradually foodpanda grew to be one of the biggest online food delivery services in the country. Studies show that foodpanda had the biggest competitive advantage and was growing faster than its competitors in the market among the food delivery industry (Ahmed, J. U., & Ahmed, A., 2018). foodpanda continued its journey on the same trajectory until January 2020 when the pandemic was starting to take shape. The covid-19 pandemic was harsh to a lot of lives and made day-to-day life extremely difficult. During the earlier stage of the pandemic,

people were unable to leave their homes as they would have been exposed to the viral disease affiliated with the deadly virus. It was rather a tough time for the people in Bangladesh and especially for the people of Dhaka as the pandemic lockdown was first imposed in the city of Dhaka. People being unable to leave their homes could not do their day-to-day chores including grocery shopping for their homes. It goes without saying that groceries are one of the most important necessities in any household. So, it can't be imagined that a household will be running without groceries or grocery shopping. This dilemma was mainly the reason why foodpanda decided to introduce a service branch called pandamart. pandamart is basically a one-stop grocery shop that is operated online and delivers groceries to your house. This was a desirable service during the early stages of pandemic lockdown as foodpanda was able to deliver the necessary items to their customers' doorsteps. Along with the introduction of pandamart, foodpanda also partnered with various grocery shops and all-purpose stores throughout the city. The partnered shops can sell their products in foodpanda through the app like the restaurants that are selling their food. This aspect of the business was not a trendy one in Bangladesh as only Chaldal and Meena Click used to serve customers with similar services. However, with the introduction of pandamart, foodpanda expanded its horizons in a way greater revenue stream. Studies show that businesses that work in manufacturing and retailing are required to do so. Unexpected events might cause harm to goods. Thus, they include a built-in buffer (Mustafa, A., 2020)

This year, in 2022, foodpanda has introduced its "Panda Pro" pro service, which offers numerous advantages for each section of restaurant orders, pick-up orders, and shop/pandamart orders. Along with this new service line, they have also introduced the "Dine-in" option, via which customers can redeem points earned from their "Panda Pro" membership and receive a significant discount at specified restaurants if they go for dine-in.





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- 10% off pandamart**
 Valid for all pandamart on orders above Tk. 999 up to Tk. 150
 3 vouchers/month
 
- 25% off dine-in**
 Valid on all participating restaurants
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Image: Pandapro subscription model of foodpanda Bangladesh

Source: foodpanda mobile application

2.2.1 Mission and Vision of the company:

Every company has its own tagline to distinguish itself from the competition. foodpanda, like other companies, has its own slogan: "Bringing Good Food into Your Everyday." This tagline essentially depicts their goal of providing wonderful and delicious foods to their customers, and in order to do so, they have their own mission in which they will not simply deliver foods or groceries, but will go above and beyond to make their customers' journey memorable.

2.2.2 Business model of foodpanda:

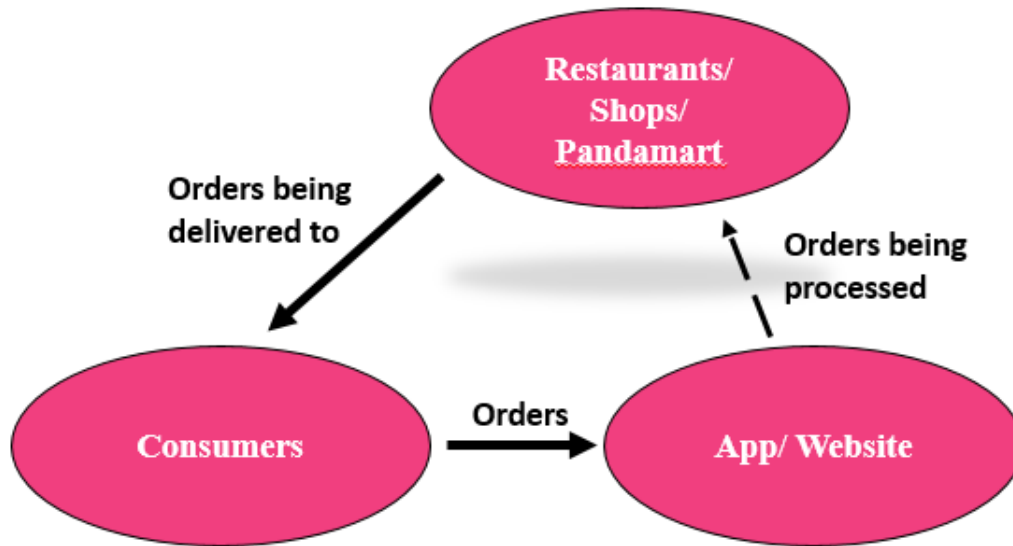


Figure 1 : Business model of foodpanda

The company foodpanda operates on a B2C business strategy, with consumers placing orders via the foodpanda app or website, and all orders being delivered by its business organizations, which are primarily affiliated restaurants, shops, and their own in-house shop called pandamart. All orders, however, are delivered by foodpanda's riders. Finally, foodpanda generates revenue through delivery fees and commissions from restaurants and shops.

2.3 Management Practices

A healthy management practice can be advantageous to any company, and when the practice follows the path of democratic or participatory management, any challenging duties appear easier by avoiding ongoing concerns collaboratively. However, foodpanda also does follow the route of democratic management which is also known as participative management practice.

2.3.1 Organizational Hierarchy Chart:

The organizational hierarchy chart will be broken down into smaller portions so that the hierarchy is better understood. First of all, the basic management hierarchy chart is in the following:



Figure 2: Basic Management Hierarchy

As foodpanda is owned by Delivery Hero, the CEO of foodpanda, Ralf Wenzel is under the direct supervision of Delivery Hero CEO, Niklas Ostberg. Wenzel controls the foodpanda brand and the regional CEOs are directly under his supervision. The foodpanda regionals control more than a single country at once and watches over all the departments of the specific countries as well. foodpanda Bangladesh is affiliated with the Regional foodpanda hub in Malaysia.

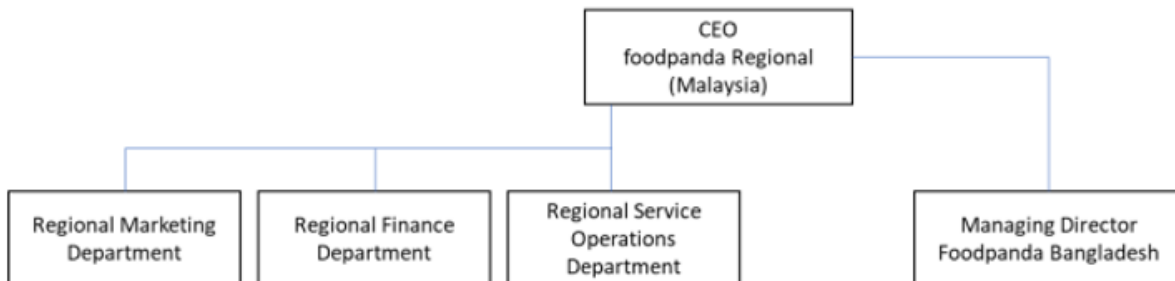


Figure 3: Regional Hierarchy

The CEO of the regional foodpanda headquarters supervises the regional departments. The regional marketing, finance and service operations departments follow a centralized management system with all the countries that are holding foodpanda operations. The CEO of foodpanda Malaysian region is responsible for the performances of the affiliated countries as well. That is why the regional CEO is the one to whom the Managing Directors report. Just like Bangladesh, the other Asian countries under the supervision of the Regional headquarter report to the regional CEO as well. However, the regional departments coordinate with the country level departments to develop campaigns and operating policies. That is why the departments are in the league of their own. The departments act like the centralized beacon as mentioned before. So, even though the Managing Directors of the respective countries are responsible for the performance of the corresponding branch, certain departments of the company are controlled by the regional parent departments.

The marketing departments have a little more wrenching room than the other departments as marketing depends a lot on the culture of every specific country and the regional marketing team only greenlights the projects and campaigns that are brought forward for them to judge. The marketing department budgets are in fact allocated by the higher management of foodpanda Bangladesh. But, the regional marketing team is informed and coordinated when a campaign is about to hit the streets of the respective countries.

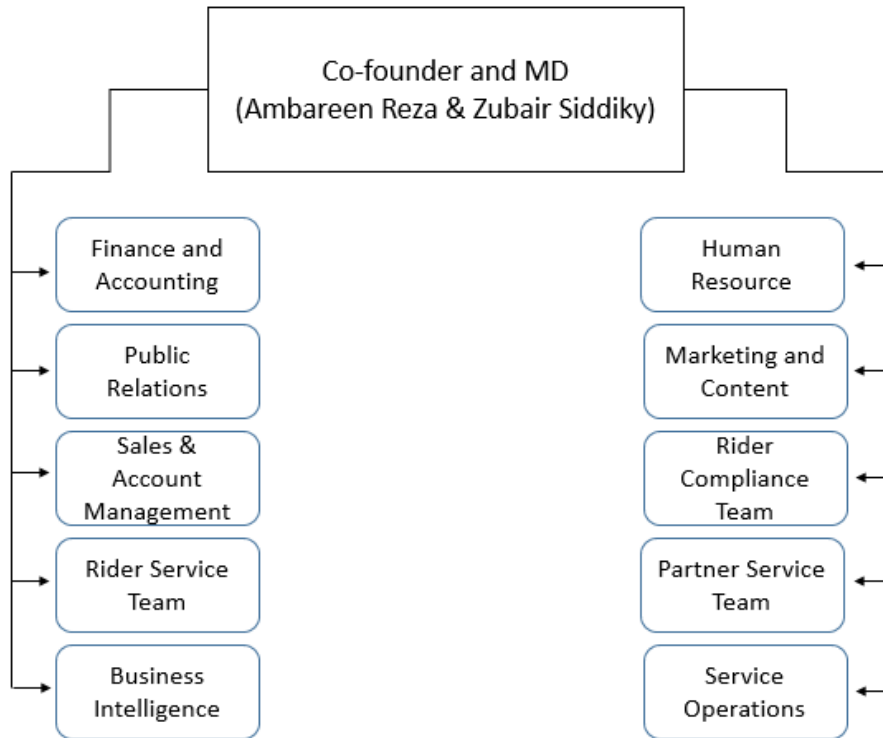


Figure 4: Organizational structure of foodpanda BD

On the other hand, the service operations department of foodpanda however is not controlled by foreign forces. The operations department is run only by the upper management of foodpanda Bangladesh and that includes the Managing Directors Ambareen Reza and Zubair Siddiky.

2.3.2 Recruitment and training:

A permanent employee must go through two stages of the interview process. The first meeting is scheduled with the department head. In the last phase, the employee will be interviewed by the HR director. Furthermore, after entering a certain department, the employee must attend one month of various types of training sessions. After that, at the end of the year, employees were given an appraisal based on their performance. Insurance, two festival bonuses, medical allowances, and other perks were given by foodpanda. The HR department is always concerned about the mental health of its employees and strives to provide a healthy working environment.

For a part-time employee, on the other hand, an interview session with the trainer, performance lead, and quality analyst is scheduled, and during this training session, they try to find the basic skills like communication and typing skills, where they demand a certain WPM (word per minute) from each candidate to pass the initial state. Following that, a written session is held to determine whether the candidate can translate from Bangla to English and from English to Bangla. After the final selection, part-time employees must attend a one-week training session to become acquainted with the in-house tools and software before beginning the shadow and live session, where they will work under the supervision of a tenure agent. Part-time employees work 6 hours per week with one day off, while full-time employees work 9 hours per week with two days off.

2.3.2 Incentives for part-timers:

The company always aims to motivate its employees by providing an incentive solely to those who can keep their quality score between 85% and 100%. Furthermore, they provide additional incentives to an individual who has regularly been a top performance for a quarter. Such things always generate a competitive and inspiring environment for people to strive for more by maintaining the company's quality for the future betterment.

2.4 Marketing Practices

The marketing department is arguably the most active department in foodpanda Bangladesh. Like any other company, the marketing department of foodpanda Bangladesh is the place where the creative works happen. The marketing department is responsible for planning and strategizing campaigns of all sorts. foodpanda Bangladesh runs huge campaigns all over the year and celebrates all sorts of national and cultural specialties. The celebrations and the campaigns are aligned by the marketing department when they make newer, more exciting offers for the customers. They also decide how to provide discounts and deals to customers to boost sales. foodpanda Bangladesh is well known for their discounts in almost all sorts of restaurants and shops. Marketing department controls the whole process of making a customer eligible for discounts by deducting from segments of customers. Their work mostly prioritizes customer

retention and customer introductions. Marketing department of the company has a huge role in making foodpanda one of the largest food delivery services in Bangladesh.

foodpanda's marketing team is constantly working to warm up their existing consumer base. Every month, the marketing department executes a variety of new customer acquisition efforts. Getting new clients' attention is one of foodpanda's main marketing methods. The authority then gives them vouchers in order to convert the customer to their platform. Once a customer has become accustomed to foodpanda's platform, they will no longer issue vouchers to their established customer base. foodpanda's **target market** is the younger generation and people from lower socioeconomic backgrounds. "Bringing Good Food into Your Everyday" is Foodpanda's tagline. So, Foodpanda's **target demographic** is people who are busy in their everyday lives and don't want to deal with the trouble of cooking. As a result, the brand position precisely complements Foodpanda's target audience. foodpanda promotes its services through a variety of marketing channels. Each month, they execute online and offline efforts to engage additional clients. For the audience, they create both OVC and TVC.

Additionally, they offer vouchers to both existing and new consumers. They are currently marketing their products through social media sites. On the other hand, they also use transportation stickering for marketing efforts. foodpanda is now working on a new product called "pandamart." They offer promotions that focus on customers receiving necessary grocery deliveries within 30 minutes after placing an order.

This year, foodpanda has introduced a new premium service under the name "Panda Pro" in an effort to increase customer acquisition through the use of attractive discounts. The "Dine-in" feature, which allows users to redeem their "Panda Pro" points for discounts at having food at restaurants, was also released after a few months of the pro service. Foodpanda Bangladesh was able to expand their user base by launching these features and services.

Foodpanda Bangladesh, on the other hand, promotes itself using online channels like social media, email, and mobile devices. Now more than ever, businesses rely on social media platforms like Facebook, Instagram, and YouTube to disseminate information about their sales and other

promotions and foodpanda Bangladesh also does the same. Since users are required to provide their email addresses when creating a foodpanda account, the company uses this information to keep customers aware of all the latest deals and promotions by way of email. The most intriguing aspect is that foodpanda Bangladesh is making excellent use of mobile marketing by notifying customers of discounts and specials via text message.

In this way by launching new services and products they successfully captured their new customers with the existing ones to try their new options. Also, foodpanda Bangladesh always spends a significant amount of money on their promotional activities so that they can reach out to the maximum number of people possible with their service and that gives foodpanda bangladesh a competitive advantage.

2.5 Financial Practices

All the finances of foodpanda are centrally managed by the parent company Delivery Hero, which is currently operating in 70 countries across 4 continents. Delivery Hero centrally manages the reporting of all the subsidiaries combinedly with the reports submitted by each of the subsidiaries. The general reporting practices are consistent across all the subsidiaries.

An internal control system ("ICS") for accounting has been implemented by Delivery Hero and is also utilized by foodpanda. All risks that could adversely affect the accurate compilation of the Consolidated Financial Statements in conformity with the pertinent accounting standards and applicable regulations are identified, evaluated, and controlled by this system.

foodpanda submits its standardized reports of financial data to the central team once every month. The consistency and correctness of the financial information throughout all the concerns as well as on a consolidated basis are ensured by a multi-stage assessment procedure of the financial information at regional and central levels by Delivery Hero. An automated consolidation using software is then performed after that. The system keeps track of manual adjustments and monitors them via dual control. The financial systems' authorization model is re-evaluated and changed on a regular basis. To satisfy the reporting requirements, the accounting for a few selected complex reporting topics, such as business combinations, derivative financial instruments, and share-based

payment arrangements, is carried out centrally based on the assessment of complexity and the inherent management judgment in the application of accounting policies. To guarantee the appropriateness of the presentation in accordance with the accounting requirements, this includes consulting with impartial, external experts for the accounting and valuation of complicated transactions. The constant cross-functional communication between the central functions, particularly between Legal, Strategy, Group Accounting, and Group Controlling, further reduces the risk of erroneous and incomplete documentation of business transactions.

The ICS is founded on the idea of functional separation and is made up of many internal subprocesses. A competent individual is allocated to each sub-process. These procedures and dangers associated with related reporting are examined and recorded. A proper and methodically consistent procedure for preparing financial statements is ensured by the internal control system, which consists of preventative, monitoring, and detective control measures. All controls, including control descriptions, control types, and execution frequency are defined by a control matrix. The respective group finance teams receive comprehensive accounting instructions for important financial statement components from the group-wide accounting and reporting manual. The central team periodically updates the internal regulations, which are then distributed to all subsidiaries. This aims to limit accounting discretion and ensure consistency. To check adherence to IFRS and internal policies, Internal Audit demands a representation letter from the subsidiaries on a quarterly basis.

foodpanda also considers the conclusions of internal auditors, the outcomes of prior audits of the financial statements, and the risk management practices of Group Accounting when assessing the risk of the accounting-related internal control system. The dangers that have been identified are continually monitored and re-evaluated. Risks are reflected and declared in the Consolidated Financial Statements based on this assessment and in line with IFRS regulations. Internal Audit conducts regular governance assessments and risk-based inquiries into the efficiency of the internal control system for accounting. No absolute assurance on the operational effectiveness of the ICS can be given due to the existence of intrinsic audit restrictions.

2.5.1 Financial Performance Analysis (2017-2021)

As mentioned in the previous chapter, the parent company of Foodpanda does their financial report centrally consisting of all the wings spread out in the world. Thus, the analysis is done based on the information gathered from the consolidated reports of Delivery Hero.

- **Earnings per Share :**

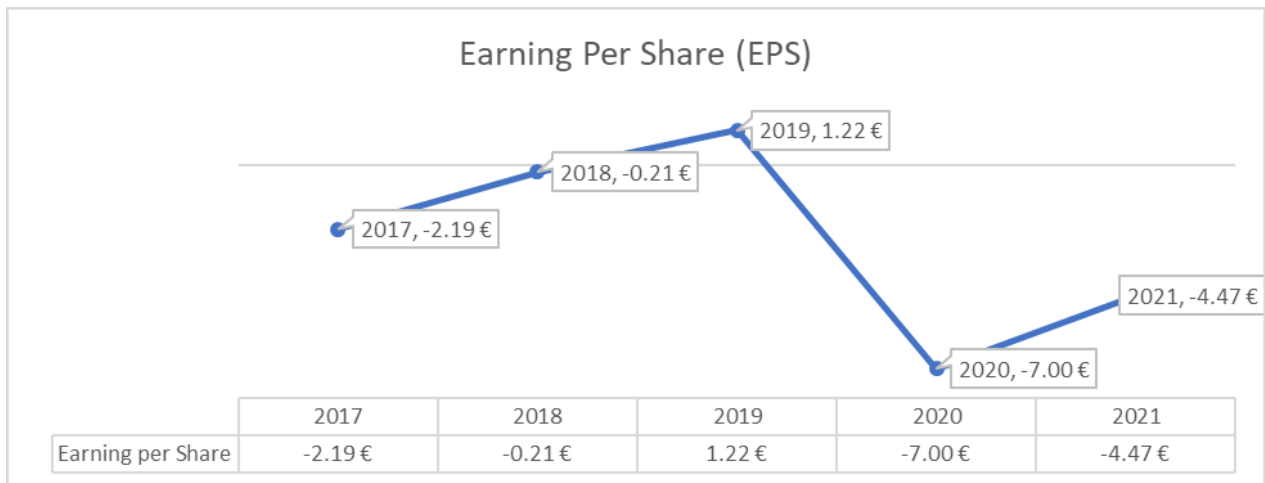


Figure 5: Earning per Share of Delivery Hero in the last 5 years

For the first time since 2017, Delivery Hero's momentarily fell below its IPO price, but a continuous selloff this year wiped off roughly three-quarters of its market worth. The market value of the delivery service company's stock has plummeted this year, losing around 18.1 billion euros, as investors doubt the company's capacity to become profitable in the face of increased financing costs (Ren, 2022). At 1x forward revenue, Delivery Hero stock is trading well below historical levels. Despite this, the multinational start-up, now a publicly traded company, remains well positioned in its core online food delivery markets. The company sustained robust GMV growth in its most recent quarter and maintained its FCF break-even guidance for Q2 2023, despite a macro-driven slowdown in industry volumes. Long-term expenditures in enhancing its own distribution capabilities have also significantly outperformed the competition, enhancing the standard and size of its footprint. Unit economics are crucial in this case, and Delivery Hero's greater size puts it head and shoulders over its competitors in the race to break even. The food delivery sector was still enjoying high demand due to the pandemic last year. As markets started

to open, that euphoria collapsed. Unrelenting competition and inflation are putting additional strain on already limited budgets in a sector that has not yet achieved profitability. A wider move away from high growth stocks and rising interest rates didn't help. A consumer's wallet is being affected by inflation.

- **Return on Equity** :

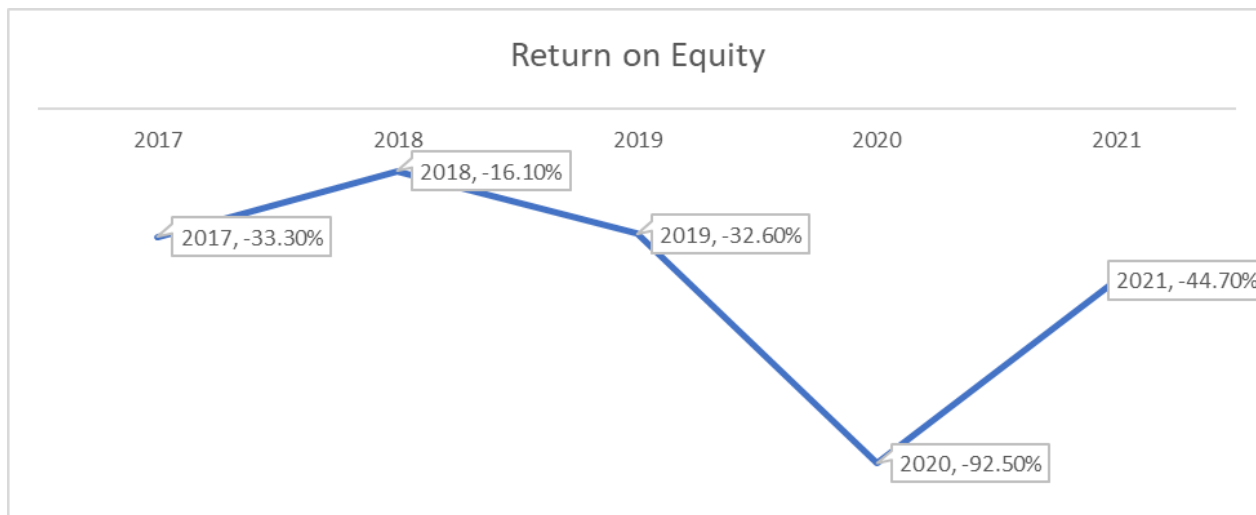


Figure 6: Return on Equity of Delivery Hero in the last 5 years

The chart shown above resonates and is consistent with the EPS analysis. Their ROE has been reported at negative in the observed years after the company issued their initial public offerings. Delivery Hero will mark its tenth anniversary in 2021. Delivery Hero has beaten all key indices since its IPO, despite the decrease in share price in 2021. The acquisition of the Woowa group, the continued growth of the Integrated Verticals and own-delivery businesses, as well as the global pandemic, all had a significant impact on the performance of the company in 2021.

The price of Delivery Hero's shares dramatically dropped in the first quarter of 2022. Delivery Hero's forecast of more noticeable growth investments for the fiscal year 2022 has not been well welcomed by the capital market, in addition to the rotation from growth to value equities that was previously highlighted and the sell-off, particularly among non-profitable Tech businesses. The conflict in Ukraine and other international events also contributed to the decline.

2.6 Information System Practices

foodpanda is particularly concerned about the security of its information. Due to the need to save data, foodpanda employs a variety of software. Both bespoke and third-party applications are available. In various departments, software is employed to secure data. Departments are using Slack, Salesforce, Work Chat, Tableau, and other applications. They used custom-made software to evaluate the performance of their personnel. The HR department, on the other hand, employs a variety of HRMS software. The names of that software cannot be revealed according to the data protection policy.

2.7 Background of the Service Operations Department

The Service Operations Department of foodpanda Bangladesh is still new compared to the other online services that are operating in the country. Initially, foodpanda Bangladesh did not have its own in-house Service Operations Department as it used to outsource the manpower for service operations. The affiliated company, Genex, filled the needs of the manpower needed to run the services provided to the customers of the company. Later, foodpanda Bangladesh introduced its first in-house service operations roster in 2020, which consisted of students willing to invest their time in a part-time job besides education during the nationwide lockdown. The shift from outsourcing to introducing an in-house team was pretty effective as the working agents from Genex were frequently having a low CSAT score, which determines customer satisfaction after every full resolution or contact. The Genex agents were unable to understand a lot of customer issues as they were not familiar with the operations of foodpanda Bangladesh in detail and had to make judgmental calls on various occasions even though the customers' expectations often did not meet that decision. Genex being a third party to the company and the customers, they were unable to fully absorb the operating policies to provide the customers with a proper resolution, which resulted in a lower rate of customer retention. However, the in-house team was trained for a specific time to be able to learn the operating policies and functions of the company to be able to

provide the customers with proper resolutions in case of negative experiences. The in-house team, being adapted to the policies were a much better choice than the outsourcing option as they were able to investigate every issue promptly and with care with the help of the shift leads and team leads of the department, who work in Junior Executive roles of the company and was able to guide the whole team through the operating process of the company.

The Service Operations Department started out with 3 distinct teams and they are:

1. FP CS BD Email (Email Team)
2. FP CS BD Social (Social Media Team)
3. FP CS Recovery (Service Recovery Team)

The Email team and the Social Media team are called the level 1 teams, where the Service Recovery Team are labeled as the level 2 team for the difference in operating styles. Level 1 teams handle simpler issues, whereas the level 2 team handles the rare cases that can actually affect the image of the company. Level 1 teams communicate with the customer via social media transcripts like personal inbox or comment section or via email, that is registered with their foodpanda account. The Service Recovery Team on the other hand contacts the customer via phone calls while also maintaining the communication via email to provide the customer with a usable transcript.

The Service Recovery Team was later split in two, one being the Service Recovery Team while the split team being the new Risk Fraud Management Team, or RFM in short. The RFM team deals with suspected fraudulent activities and the Service Recovery Team recovers customers in post negative experiences.

2.8 Industry and Competitive Analysis

To determine the company's competitive advantage and its entire ecosystem's viewpoint, Porter's Five Forces, SWOT and PESTLE analysis are conducted:

2.8.1 Porter's Five Forces Analysis:

- a) **Competition in the industry:** The competition in the industry is **high** here as there are a few number of competitors in this market, including Chaldal, HungryNaki, Pathao, and Shohoz Food, all of whom provide identical services. Due to their promotional activities and offerings, foodpanda Bangladesh is the odd one out. If foodpanda Bangladesh's customers discover better offerings and lower pricing from the aforementioned competitors then it can be a substantial threat for them and they must be more vigilant.

- b) **Threat of new entrants into the industry:** The threat of new entrants in this industry is comparatively **low** because, first and foremost, this type of service requires a large financial investment for proper setup. Furthermore, it would be extremely difficult to compete with current competitors' offerings and earn faith in their services. In this context, we can think of Uber Eats and eFood, which likewise entered the market but ultimately failed.

- c) **Power of Suppliers:** Here the power of suppliers is **high**. Essentially, renowned restaurants and stores serve as foodpanda's suppliers, and they have the authority to negotiate prices. The commission these vendors pay to foodpanda is one of its sources of income. However, if the company failed to negotiate favorably with these stores and restaurants, there is a danger that they would lose well-known shops and restaurants from a certain area.

- d) **Power of Buyers:** Due to the same services offered by Chaldal, HungryNaki, Pathao, and Shohoz Food, the buying power of buyers who are primarily customers is **high**. For this reason, regular promotions, discounts, and excellent customer service are more vital for customer retention. Otherwise, these customers have alternatives available on the market, and they will not hesitate to switch.

- e) **Threat of Substitutes:** As previously stated, companies such as Chaldal, HungryNaki, Pathao, and Shohoz Food provide the same services with nearly identical offerings and vendors and substitutions are more likely when similar products or services are available

in the market for the customers to choose. But the promo offerings and deals and trustworthy services make foodpanda Bangladesh different from the other industry players. Consequently, if foodpanda Bangladesh fails to retain customers with their services, promo offers and costs, there is a considerable risk that customers would shift to one of these competitors. Since the rate of substitution services are there in the market for the customers to switch. For this reason, the threat of switching to any of these substitutes is really **high**.

2.8.2 SWOT Analysis:

❖ Strengths:

1. Being an international company, foodpanda Bangladesh has a strong infrastructure.
2. To satisfy their customers and to retain them, foodpanda Bangladesh always offers different offers and discounts of festivals as well as weekly and monthly basis.
3. It provides a user-friendly website and app so that customers can find everything in one go.
4. The company always takes the required measures for rider concerns, such as misbehaving with the customers, not maintaining delivery instructions, money collection issues or marking the order as delivered. These unprofessional behaviors are treated with such severity.
5. This year foodapnda launched their loyalty program which is “Panda Pro” where many offerings and discounts are provided along with free deliveries that helped them in customer retention.

❖ Weaknesses:

1. Recently, it takes more than the usual time to deliver the orders and it is one of the reasons behind customers dissatisfaction and the company should look into this to get rid of this issue.

2. Sometimes the mobile app and the website shows certain restaurants and shops as “Temporarily Unavailable” whereas they are available. The company should really take this glitch in consideration for better customer experience.
3. Currently, the company lacks sufficient riders, and orders are sometimes canceled due to riders' unavailability
4. In contrast to Pathao, which allows consumers to select online payment but pay the amount via the app after the order has been delivered, foodpanda charges first before delivering the order, causing many problems for customers who prefer to pay online. When customers try to use an online payment method to place an order, due to a technological malfunction it causes them to be charged even though the order was never placed.
5. The service is not available to all over the country yet.

❖ **Opportunities:**

1. These days, you can get just about whatever you need from Foodpanda, from restaurants to groceries to even prescription medications. With this kind of growth and expansion, they can be seen as a digital or virtual marketplace in the near future.
2. After considering and improving their gaps and faults in the service, foodpanda Bangladesh should start working on their area coverage to reach with their service all over the country.
3. foodpanda Bangladesh should go for more partnership with different restaurants as there are people who are into organic and healthy foods. Also, there are some restaurants and home kitchens offering such foods. By doing so, the company will be able to gather new customers as well.

❖ **Threats:**

1. First and foremost threat for the foodpanda company is its own competitors. If the company fails to retain its customers then those customers will undoubtedly switch to another option on the market.

2. Due to a few inadequacies and a failure to rectify them, the company's service image may suffer as a result of negative social media feedback from customers. Since social media is a powerful force in the modern era.

2.8.3 PESTLE Analysis:

- **Political:** A food industry is always subject to some regulatory structure, such as the tidiness of the kitchen and products a restaurant uses, the quality of the raw materials, and the workforce who prepares and delivers the food by the **government** to ensure that the consumers are not subjected to poor nutrition. In order to minimize complexity with regard to food services, the **National Consumers' Right Protection** plays a very important role in monitoring the restaurants. For the online delivery services, all associated restaurants are regulated by the aforementioned regulatory frameworks. For online food delivery services like foodpanda, Chaldal, HungryNaki, Pathao, and Shohoz Food, everything is the same. Now, if the government changes or the current government comes up with new regulations then each restaurant under the food industry is bound to follow that.

- **Economic:** The food industry, including all online food delivery services, makes a significant economic contribution to our nation. People are becoming accustomed to online food delivery services in the contemporary digital age, and the majority of people order their lunch or dinner through these online food delivery services.

On the other hand, numerous restaurants were closed during COVID-19 because of the safety concern. The government only permitted restaurants to operate contactless delivery services at the time, thus online food delivery services like foodpanda seized this opportunity by forming partnerships with additional food aggregators to operate the contactless delivery service.

In addition, foodpanda Bangladesh increased employment opportunities by hiring employees for their services during COVID-19 and after COVID-19, when the majority of people began relying on online food delivery services, taking into account the rising

income rate, changed standard of living, and increasing labor costs as well. In this way, these food delivery services are also contributing to our national economy.

- **Social:** In the current age of social media, we can quickly discover any information online and track any significant societal changes via social media. For instance, when it comes to the food industry, if a restaurant or food item experiences social media success for its offerings and if customers are praising it, online food delivery services have an opportunity to partner with it and make it available on their platform as well in order to attract more customers.

Additionally, these online food delivery services use social media to sell their goods and services. For instance, commercials that suggest busy or workaholic people struggle to prepare their meals and instead opt for quick and convenient food delivery services to enjoy their meal can draw a sizable number of customers. foodpanda Bangladesh also uses social media platforms like Facebook, Instagram, and YouTube well because they have a very strong upper management in charge of marketing.

- **Technology:** The experiences of making online purchases are currently changing due to technology improvements. Customers now anticipate greater ease and transparency when making online purchases. And one of the most well-known online food delivery services, foodpanda Bangladesh, made every effort to keep these convenience elements in mind. Foodpanda Bangladesh's mobile app and website (<https://www.foodpanda.com.bd/>) are both very simple to use and navigate.
- **Legal:** foodpanda Bangladesh, the leading option for online food delivery services, must take a few factors into account, including how the food items are transported, processed, prepared, and properly maintained hygienic standards. Since so many restaurants and their own store, "Pandamart," are included in their service, foodpanda Bangladesh, a well-known food delivery service provider, is required to uphold these standards. If any laws are broken through their service, a customer may file a complaint, which would negatively affect foodpanda's business. As a result, all restaurants and foodpanda

Bangladesh are obligated to prepare food in accordance with the law and applicable requirements.

- **Environmental:** Businesses who distribute food should be more cautious about the negative impacts of processed foods in light of the consequences on health. and the use of plastic packaging. Additionally, foodpanda Bangladesh is constantly concerned with the quality of the food prepared and takes swift legal action against restaurants if any customers have problems with the food. However, as Pandamart employs eco-friendly packaging by limiting the use of plastic, they should also encourage restaurants to do the same when delivering food items.

2.9 Summary and Conclusion

After doing a Porter's Five Forces, SWOT and PESTLE analysis, we can confirm that foodpanda Bangladesh is the country's leading online food delivery service with a wide variety of deals and discounts. Moreover, they are observing all the affiliated restaurants and shops and taking immediate actions if any customer faces issues with the service by maintaining all the rules and regulations provided by the government to make sure each and every customer gets utmost services from their side. Consequently, they are making every effort to retain customers by offering loyalty programs and its features.

3.0 Recommendations

Despite being the leading online food delivery service provider in Bangladesh, foodpanda needs to work on their gray areas such as app glitches, online payment issues and the reason behind orders getting delayed nowadays. Also, the loyalty program that they launched does have few flaws and to retain the customers the company should focus on those areas.

Chapter 3: Project Part

3.1 Introduction

3.1.1 Background and Problem Statement

One of the most popular services used by consumers in the modern era is online delivery. Additionally, there are concerning statistics regarding the fraud inside these post-delivery services. Most of the post-delivery businesses now prioritize preventing these fraud acts and ensuring the quality of their services because there is always room for growth. These fraudsters can take many different forms, including making up fake claims, creating multiple accounts, etc. And, while some services are prone to fraud while others are not, there should be some countermeasures in place to prevent such fraudulent behaviors from recurring (Barker et al, 2008).

Nowadays, more or less every online business must now face certain fraudulent actions, which are the most serious threats to an online business. According to studies, a fraud can serve a significant purpose in defrauding a business, particularly in the retail industry, which frequently experiences fraudulent actions (Amasiatu, C. V., & Shah, M. H., 2014). In this Digitalization Era, "foodpanda" utilizes data analytics techniques and a few approaches to identify fraudsters and their associated claims in order to prevent all of these fraudulent activities by identifying and recognizing the fraudulent user's patterns.

3.1.2 Objective

The primary objective of this research is to evaluate and understand the impacts that risk and fraud management has on addressing fraudulent claims and actions in the online delivery industry. Additionally, a comparison and recommendations for the future of the tools used by MFS and the banking sector for more effective results in the context of online food delivery services are included.

3.1.3 Significance

This report will try to shed some light and how the risk and fraud management system can influence the results of dealing with fraudulent customers. And to do so they can come up with a stronger security framework to catch fraudulent activities more effectively.

In comparison to the MFS and Banking sectors' one of the approaches, this paper will attempt to recognize the risk and fraud management systems utilized by online grocery stores and food delivery services, as well as how they might strengthen their security framework.

3.2 Content Analysis and Literature Review:

The environment of financial crime has undergone significant changes as a result of the growth of digital payments. As a result, conventional methods for detecting fraud, such rule-based systems, have largely lost their effectiveness. Graph computing-based AI and machine learning solutions have attracted a lot of attention lately. Graph-based methods offer distinctive prospects for financial crime detection solutions. In this light, there have been several studies related to fraud detection technologies and fraud detection methods.

Hernandez et al. (2018) presented a fraud de-anonymization strategy in their study to counteract search rank fraud, which involves attributing user accounts flagged by fraud detection algorithms in online peer-review systems to the people in charge of them. The study also developed a graph-based deep learning approach to predict ownership of account pairs by the same fraudster and used it to build discriminative fraud de-anonymization (DDA) and pseudonymous fraudster discovery algorithms. The study also designed fraud de-anonymization as a maximum likelihood estimation problem, introduced UODA, an unconstrained optimization solution, and developed these methods (PFD). The first cheating-resistant fraud de-anonymization validation protocol, which turned human fraud workers into oracles for ground truth and performance evaluation, was also introduced to address the lack of ground truth fraud data and its detrimental effects on online systems that employ fraud detection. In a user study with 16 human fraud investigators, UODA attained a 91% accuracy rate. Their co-ownership predictor considerably beat a state-of-the-art rival on ground truth data gathered from the first 23 fraudsters. This allowed DDA and PFD to identify tens of new fraudsters and link thousands of questionable user accounts to known and newly identified fraudsters.

Naduri et al. (2020) in their study offered two ground-breaking techniques to detect various fraud patterns: fraud islands (link analysis) and multi-layer machine learning models. In order to study the connections between various fraudulent entities and to elucidate hidden complicated fraud patterns across the created network, fraud islands are created utilizing link analysis. In order to address the very varied nature of fraud practices, multi-layer models are used. The banks' declination judgments, the manual review agents' rejection decisions, the banks' fraud alerts, and the customers' chargeback requests were among the several channels used to determine the fraud labels. It was logically anticipated that various fraud risk prevention tools might detect various fraud patterns such as bank, manual hands-on review team, and fraud ML. The tests demonstrated that the accuracy of fraud judgements can be greatly increased by combining a few distinct machine learning models that were trained using various sorts of fraud labels. Link graph aggregated features were developed through the fraud island project, and they could more effectively reveal some important details concerning concealed fraud tendencies. Additionally, it was discovered through the performed case study that the link graph aggregate feature also helped increase the accuracy of the machine learning models used for fraud detection. Three sub-models for subpopulations (transactions) that received fraud labels from various risk prevention systems, such as risk decisions made by merchants' fraud risk system, banks' authorization decisions, and fraud alert from associations, were developed using the multi-layer modelling technique. It was thought that more fraud in various types of fraud patterns may be discovered by employing the fraud labels established by various internal and external risk systems.

Yoon & Woo (2020) conducted a study in the existing food delivery fraud detection technology used in the famous Korean food delivery service, Baemin. By framing this issue as a novelty detection over sequential data, Yoon & Woo (2020) in their study attempted to identify people abusing the food delivery system who used illegal vehicles. According to the study, the Variational Reward Inference based Novelty Detector (VRIND) could learn the behavioural intention of decision-making experts by sequential novelty detection using inverse reinforcement learning and variational inference. A neural network that can approximate reward distributions through variational reward inference serves as the representation of the reward function. The study demonstrated that their proposed model significantly outperformed the other baseline methods in identifying novelty (abusers) in sequential data using a commercial food delivery trajectory dataset from their company. This had the potential to ensure regulatory compliance and

provide the fair opportunity to more than 100,000 delivery riders, serving more than 1.5 million daily transactions in the Baemin food delivery system.

Kurshan & Sen (2020) in their study discussed the implementation challenges that both current and next-generation graph systems confront were covered in their research. Additionally, advances in financial crime and digital payments point to new obstacles to the detection techniques' ability to remain effective. They therefore examined the threat environment and contend that it offers crucial information for creating graph-based remedies. According to the study's findings, it is imperative to personalize and combine the various detection and prevention systems. The study made the case that concentrating on the requirements unique to each application offers chances to enhance both existing and new graph-based solutions.

Ruth et al. (2020) in their study looked at four different product groups' fraud risk in the food service industry, including casual dining restaurants, fine dining restaurants, and mass caterers. It also identified underlying fraud vulnerability elements. For 40% of the fraud indicators, the 15 food service providers received a high vulnerability rating. Particularly, there were seen to be more opportunities and less controls. Overall, the type of food service provider more so than the type of food item influenced fraud vulnerability. The most at risk seems to be casual dining establishments, then luxury dining establishments. Because they had better food fraud safeguards in place, mass caterers appeared to be the least risk business operators. It was highly advised by Ruth et al. (2020) that mitigation measures in the food service sector be strengthened due to its high sensitivity.

Amiri and Hekmat's (2021) research, which was based on a preliminary classification of banking fraud in the literature, aimed to give a brief summary of the frameworks for fraud detection and prevention that are now in place from the perspective of the consumer. As a result, six types of banking fraud were identified. A framework for detecting bank fraud was developed in the study, and it contained features such device identification, global behaviour monitoring, differential analysis, global analysis, suspect list preparation, exponential fading function, and Dempster-Shafer combiner. The study discovered preventative measures, including information double checking for behaviour control, employing AI and ML for anomaly detection and behavioural biometrics for technical control, as well as several other preventative measures.

By utilizing the access situation and behaviour sequence, Ye et al. (2022) in their study addressed the issues of financial identity theft detection in e-commerce services in their study. The study suggested a hybrid approach called EnvIT to detect financial identity theft based on the heterogeneous graph and the behaviour sequence, and it was based on observations. The access environment and the historical account behaviour can both be described by EnvIT. Additionally, a careful module was used to automatically assign weights to various features. Using a real-world dataset from Meituan, China, additional experiments were conducted to better evaluate EnvIT. The trial outcomes showed that EnvIT surpasses several baseline approaches in the detection of fake accounts and attained an AUC of 0.9210.

Salamzadeh et al. (2022) sought to look into and contrast the popularity of popular grocery applications in Iran and Hungary. The information was acquired from Iranian and Hungarian customers who have made at least one online grocery app purchase. The most widely used grocery apps in Hungary and Iran, according to the findings, are Wolt and Snappfood. Users of app services in Iran are split into three groups, and the full covariance type has higher accuracy than the other three types (96%). On the basis of the diagonal covariance, it was discovered that the five apps utilized in Hungary delivered 95% accuracy from the users' perspective. The MLP algorithm's MSE value is less than 0.1, which implied a tolerable level of error. The overfitting results show that the MLP model was properly fitted.

3.3 Tools and Algorithms used in foodpanda Bangladesh against fraudulent activity

This part of this section focuses on the Service Operations Department of foodpanda Bangladesh's process of analysis of risk and fraud management and how it came to be. The function of this department is to tend to the post-service needs of the customers and ensure customer retention.

3.3.1 Frequency of Fraudulent Activities in foodpanda Bangladesh

The frequency of fraudulent activities is rather high in pandamart. This is mainly because of the professional frauds who take it as a side earning to fraud the company. Being able to receive refunds against an unopened grocery item, which has a long shelf life usually helps the frauds financially as they can resell this product in their locality or to another vendor and these types of customers are the ones who get dealt with in the Risk Fraud Management department. These customers are able to financially dent the pandamart franchises and most of the relevant items that get claimed for a refund, are usually priced very high.

3.3.2 Algorithms Used in Risk Fraud Management

To reduce errors and only serve cherished consumers, Foodpanda Bangladesh employs an algorithm that leverages data from the platform's current users. The name of this algorithm is "Dashboard." The Level 1 dashboard and the Risk Fraud Management dashboard are the two dashboards that the Foodpanda Bangladesh customer service team uses. These dashboards are used to determine whether a customer's claim is valid. Foodpanda receives 0.5 to 1 million orders every day from its millions of clients across the nation. It goes without saying that a significant portion of those orders do not reach the clients in the manner intended. Customers then file complaints with the customer service team, which the agents then handle. These dashboards and the Risk Fraud Specialists are helpful to the CS team because many of these claims are fake. The next section will provide a breakdown of risk fraud specialists' dashboards and their duties.

- **Level 1 Dashboard:**

The first line of protection against fraudulent consumers is the Level 1 dashboard. The search result is made simpler by the Level 1 dashboard, also referred to as the L1 dashboard. An agent must search the unique customer code located in the customer's account in the dashboard to determine whether the customer is qualified for a refund. The outcomes displayed on the L1 dashboard are "Fraud" and "Genuine," respectively. If the outcome is "Fraud," the client is not qualified for a refund. It could manifest for one of two different reasons. First off, if a customer is brand-new, they could not be qualified for the L1 dashboard. Customers are disqualified at this phase of their foodpanda experience because many people create new accounts on the platform

just to request refunds. Second, if the customer's return to ordered value ratio is too high, they might not be qualified. The algorithm identifies a consumer as a fraud customer if it determines that the claims made by the customer are unreasonably frequent and unlikely to be accurate. However, if the dashboard indicates that the client is "Genuine," the consumer is qualified for a refund, and the Level 1 agents working with the CS team will then issue a refund for the impacted items. The L1 dashboard is primarily used to prevent clients from receiving excessive refunds because it reduces the revenue generated by a single customer. The problem is referred to the Risk Fraud Management team for additional examination, nevertheless, if for some reason the client's claim is legitimate and the customer keeps approaching the support team for assistance.

- **RFM Dashboard**

The level 2 agents of the CS team use the RFM dashboard, also known as the Risk Fraud Management dashboard, to view a more thorough history of the customer. To display the customer's different foodpanda interactions, the database is searched. The information displayed includes the percentage of customer order cancellations, the proportion of orders for which discount coupons were utilized, the number of accounts that the customer is running on his device, and auxiliary information such as account refunds. To determine if a consumer is fraudulent or not, level 2 agents apply specific criteria. The L1 dashboard sometimes fails to identify experienced fraudsters who attempt to obtain goods and food at a discount or for free. The RFM dashboard is useful in this situation. The RFM dashboard, however, is not always accurate because it too can occasionally miss instances of fraud.

- **Manual Fraud Check**

The level 2 team's final function in identifying fraud is a manual fraud check. Even after searching the RFM dashboard for the specific client code, the agents must manually review the customer's order history in order to determine whether the consumer deserves a refund. By examining their ordering patterns, the agents can now tell which consumers are genuine and

which are actual scammers because at this stage, the refund requests start to seem fabricated and out of the ordinary. Instead of always employing a pre-programmed algorithm, this is where human labor is needed.

3.3.3 Data Analysis of fraudulent frequencies

The second analysis will be of the data collected by myself starting from 25th June 2022 to 25th August 2022. In order to maintain the confidentiality of the specific company data, this information will not be elaborated with exact numbers, rather shown via a percentage.

During the period of data collection, I personally dealt with the problems of a certain number of customers, which is not subject to disclosure. Each of these customers was checked in all 3 algorithms provided by the operating policy and received resolutions as per the company policy.

Each of the three percentages will be analyzed in the following section along with the resolution they have got.

I. Level 1 Dashboard detected **79.22%** of the customers to be Genuine and **20.78%** of the customers to be fraudulent.

This means that the Level 1 support teams (Live-chat, Social Media, Email) will deny refunds to **20.78%** of the customers according to the operating policy. On the other hand, **79.22%** of the customers will get a refund for their claims against an issue faced. However, if the fraud customers are willing to get the services of the Level 2 teams, they can always dispute with the resolution provided to them by the Level 1 teams and following that, the Level 1 team will escalate the issue to the Level 2 teams (Risk Fraud Management and Service Recovery) according to their support needs.

II. RFM Dashboard detected **94.5%** of the customers to be Genuine and **5.5%** of the customers to be fraudulent.

The RFM dashboard dissects almost all the interaction that the customer had with the application as mentioned before. The interactions are the percentage of order cancellations by the customer,

the percentage of orders where discount vouchers were used, the number of accounts that the customer is running on his device. All these numbers determine whether the customers' issues are valid or whether the customers are simply trying to get refunds using dishonest means. The customers who are detected to be fraud in this stage are blacklisted by the system and they don't get further monetary support from the company in the future. However, the customers who are determined to be genuine in this dashboard are checked manually by the level 2 agents in order to find out whether the customer has recently picked up fraudulent habits or not.

III. Upon manual fraud check, which is done on the **94.5%** of the customers who were genuine in RFM dashboard, **88.2%** of the customers were determined to be genuine and **11.8%** of the customers displayed fraudulent behavior.

This manual check is performed on the **94.5%** of the customers who pass as genuine customers in the RFM dashboard. Which means, even among the **94.5%** customers who are not professional frauds, **11.8%** customers show fraudulent activities which cannot be classified as coincidences. As the RFM dashboard and the manual checks work as a unified unit to detect frauds, the genuine customers who reach level 2 customer service of foodpanda Bangladesh are **83.34%** (88.2% of the 94.5%). Which means, an astonishing **16.66%** of the customers in level 2 customer service are detected to be fraudulent customers. However, these numbers are based on the data collected by a single Level 2 agent, thus the average percentage can be a little above or below the mentioned. With both the data set combined, it seems that the policy of foodpanda is to return the money charged by the customer if the customer faces an issue. However, there are a huge percentage of 46 fraudulent claims that are dealt by the foodpanda customer service on a daily basis. So, the odds are pretty disadvantageous for foodpanda Bangladesh as their policy is customer friendly, but they might be exposed to fraudulent claims that can lead to huge monetary loss.

3.4 Approaches that used in MFS and Banking sectors

3.4.1 Frequency of Fraudulent Activities in MFs and Banking sectors

The introduction of technology has caused a significant transformation in the financial sector over time. The most obvious change has been in the way we now perceive money transactions. In recent years, the market for digital payments has grown astronomically. Digital frauds have increased in frequency as digital payments have. For the banking and commerce industries, managing fraud has been difficult. Finding loopholes has become a skill for fraudsters. They are using inventive methods to steal money from gullible people via phishing for them. As a result, businesses have begun to effectively manage the flaws in their payment systems and plug the gaps using machine learning and predictive analytics to detect fraud.

Neural networks is one of the algorithms that is widely being used to detect real-time fraud as it can detect fraud by instantly reading transaction behaviors and comparing it with historic data (Marutitech, 2022). Support Vector Machine is another machine learning algorithm used to detect financial fraud, mainly in credit card transactions. These algorithms help by detecting malicious behavior like using suspicious email addresses, unusual purchase behavior, diverse payments in a short time span, unusual locations, and identity mismatch. Such algorithms also help to detect email phishing, document forgery, hijacking credit card details etc.

3.4.2 Fraud Detection Methods and Management in Banks and MFS of Bangladesh

- **Neural Network**

Today, as most of us use credit cards as a form of payment more regularly, credit card fraud is a typical occurrence. This is a result of technological advancements and a growth in online transactions, which have led to frauds that have resulted in enormous financial loss. Consequently, there is a need for efficient ways to lessen the loss. The user's credit card information is also stolen by scammers using phony SMS and calls, as well as through phishing, masquerading, and other attacks.

The neural network is a component of cognitive computing technology, in which the computer imitates the way the human brain perceives patterns and functions (Keijers, 2010). The neural networks are totally adaptable and can pick up on patterns of proper behaviors. These can recognize fraud transaction patterns and respond to changes in the behaviors of typical transactions (Bansal, 2019). The neural network process moves very quickly and has real-time decision-making capabilities. The graph neural network (GNN) has recently gained popularity as a fraud detection technique. GNN models can develop meaningful representations to separate fraudulent users and events from legitimate ones by combining graph structure with qualities of nodes or edges, such as users or transactions (Jolly, 2022). The majority of current GNN systems rely on offline batch training and inference mode, which only catch fraudsters after losses and malicious events have taken place. To avoid losses, it is essential to stop fraudulent users and activities in real time (Jolly, 2022). This is especially true in corporate situations where there is only one opportunity to stop fraud. One such e-commerce platform allows anyone to register for an account. Once a fraudster uses a compromised account maliciously, they will never use that account again. (Jolly, 2022).

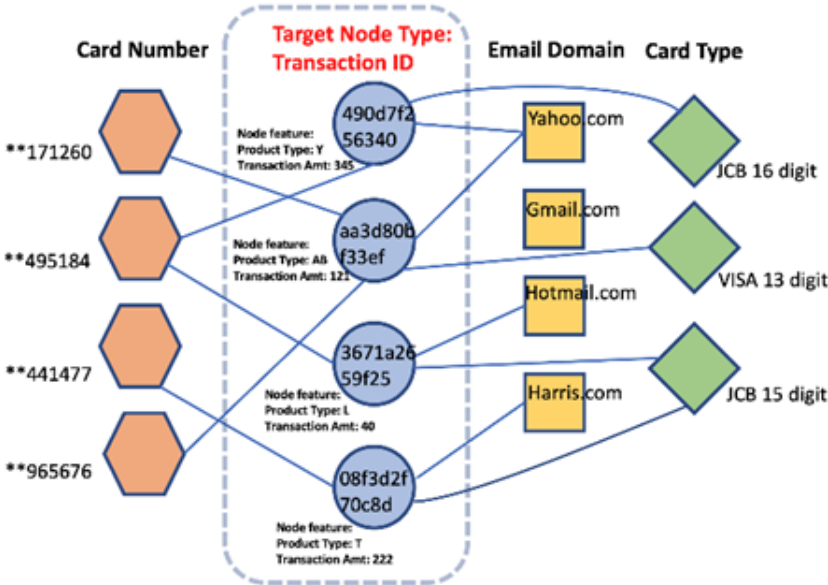


Figure 6: Sample Graph Neural Network (GNN) for fraud detection
 Source: AWS Machine Learning Blog

- **Support Vector Machine**

One of the most well-known supervised learning algorithms, Support Vector Machine, or SVM, is used to solve Classification and Regression problems (Mathworks, 2022). However, it is largely employed in Machine Learning Classification issues. The SVM algorithm's objective is to establish the best line or decision boundary that can divide n-dimensional space into classes, allowing us to quickly classify fresh data points in the future. A hyperplane is the name given to this optimal decision boundary (Mathworks, 2022). SVM selects the extreme vectors and points that aid in the creation of the hyperplane (Mathworks, 2022). Support vectors, which are used to represent these extreme instances, form the basis for the SVM method.

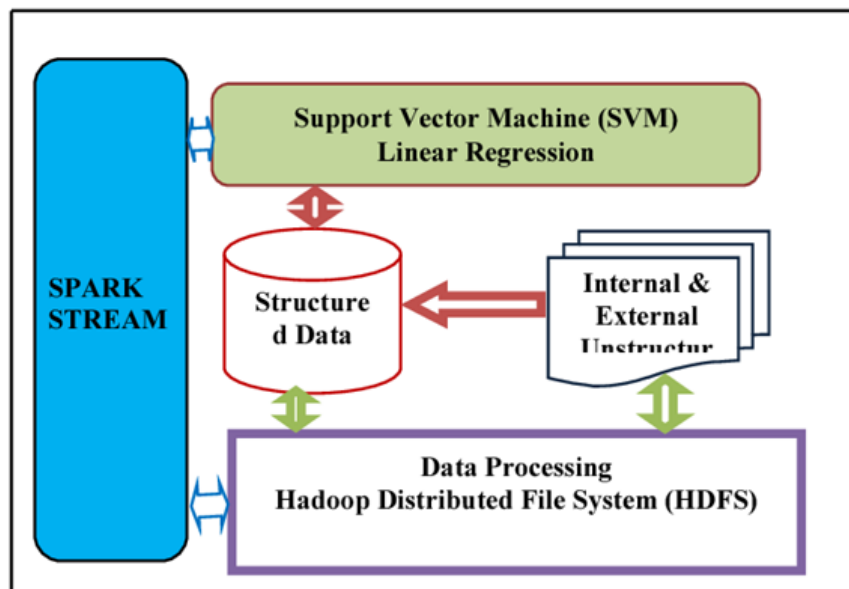


Figure 7: Support Vector Machine (SVM) for fraud detection
Source: Semantic Scholar

3.5 Analysis

3.5.1 Limitations of the current algorithms used by foodpanda

The current fraud detection management of foodpanda has several limitations, which are:

- foodpanda's current systems to maintain a grip in detecting fraud are insufficient when compared to the systems and procedures used by Bangladeshi banks and mobile service

providers. Due to the usage sequence of L1>L2>Manual check, a sizable portion of dishonest customers are amused and monetarily rewarded.

- After a customer has been examined by the Level 2 teams, the agent must manually check the consumer using two different dashboards and a whole different set of criteria.
- The dashboards don't pull any secret data from user accounts, including backup phone numbers, disposable emails, device counts, etc., that could help identify a potentially fraudulent consumer and reveal whether that specific customer has engaged in fraud against us in the past. As a result, the agents must manually verify for the aforementioned information, which takes time.
- Employing a variety of fraud detection approaches can occasionally be time-consuming and ineffective. In order to inform pertinent departments about the client history in the future, several manual procedures must be performed after the fraud identification process. Additionally, it takes a little longer than usual for this process to identify a fraud or suspected fraud customer.
- Because there have been numerous complaints about fraud activities, the department blacklists the client after validating the issue with backend software so that the company does not entertain this customer in the future. This process takes a little while to complete, for example, when considering "reseller fraud," an agent will first flag this type of customer and then notify the relevant department. As a result, the business is accommodating that fraudulent customer despite the relevant department permanently flagging them as such. As a result, a backup plan should be in place so that an agent may flag the problem as they are the ones who examine it first and prevent this kind of customer from receiving any further assistance from the company.

3.5.2 Potential of AI (Artificial Intelligence) and ML (Machine Learning) in Fraud Detection at foodpanda

Machine learning is a group of artificial intelligence (AI) algorithms that have been taught to use previous data to advise risk criteria in fraud detection. The rules can then be put into practice to prevent or permit user actions, such as suspicious logins, identity theft, or scammers. To prevent false positives and to increase the accuracy of risk rules, it is essential to highlight previous



Source: Intellias

rule-based systems that follow a simple "if/then" logic and trigger a response when one of the rules is violated, such technologies do not need to be manually educated with hundreds of rules to detect fraud situations.

This will lessen foodpanda's reliance on manual fraud checking procedures and provide the team with a real-time fraud detection solution. The capacity of machine learning algorithms to get better with use is another important characteristic. This means that machine learning-based anomaly detection systems will update these models with new data as soon as they come across a new fraud scenario so that they can quickly respond to such threats. This level of adaptation and comprehension of context is equally helpful in the opposite situation, specifically when determining the difference between a true crime and an entirely safe event. For instance, L1 and L2 may alert users who exhibit patterns of behavior that seem harmful. However, an ML system will improve with the consumption of more historical data and be able to differentiate between genuine fraud and purely anomalous behavior.

TRADITIONAL RULE-BASED APPROACH



MACHINE LEARNING APPROACH

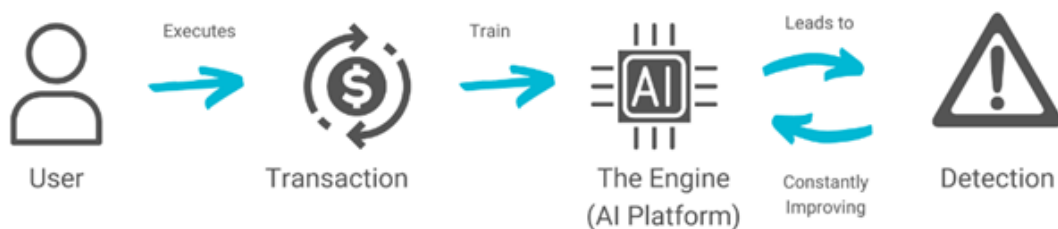


Figure 9: Traditional vs ML approach to detect fraud

Source: PI.EXCHANGE

3.5.3 Support Vector Machine (SVM) Algorithm to support limited dataset

Support Vector Machine (SVM) is a potent supervised algorithm that excels on complex, yet tiny datasets. Although Support Vector Machine, often known as SVM, can be used for classification and regression tasks, they typically perform best in the latter. As fraud detection is a rather complex process to solve involving endless possibilities, the SVM is a perfect solution for fraud management involving zero human interaction. Even with highly dimensional data, support vector machines are very effective. SVM can work in situations where a data set has more features than there are data rows. SVM performs extremely effectively when classes in the data are well separated by points. SVM can be applied to classification and regression problems. Last but not least, SVM can also be effective when used with image data. SVMs stand out for their unusual ability to provide balanced predicted performance, even in studies with potentially small sample sets. This is due to their relative simplicity and versatility in tackling a variety of classification challenges.

3.5.4 Enhanced fraud detection through Neural Networks for larger dataset

A part of machine learning that is entirely flexible and capable of learning from patterns of acceptable behavior are neural networks. These can recognize fraud transaction patterns and respond to changes in the behavior of typical transactions. The neural network process moves very quickly and has real-time decision-making capabilities. It is a fantastic addition to other techniques and becomes better with data exposure. The neural network is a component of cognitive computing technology, in which the computer imitates the way the human brain perceives patterns and functions. The most well-known benefits of neural networks are their assistance in classifying and clustering, among other benefits. They can be viewed as a categorization of the layer of clustering that is kept above the data that you save and manage. They let you to group the data that is unlabeled based on similarities between example inputs, and they are responsible for the categorization of data when the dataset is labeled by them to train on. To be more specific, neural networks can be seen as parts of broader machine learning as a service application that include classification, regression, and reinforcement learning algorithms. A linear program cannot carry out tasks that a neural network can. Due to its parallel properties, the neural network can continue functioning even when one of its components falters. A neural network makes decisions and doesn't need to be programmed again. It can be executed in any application.

3.6 Recommendation

3.6.1 Suggestions for foodpanda to combat existing limitations in detecting fraud

The business should create a single system or piece of software that combines the requirements of all three methodologies (the requirements we follow in Level 1, Level 2 dashboards, and manual checks) and yields a single outcome. Additionally, to confirm a customer's criterion, the business should offer tools designed to find extra contact information, the same number of devices, and disposable emails in the account.

As discussed in 3.5.2, through the use of machine learning, automated fraud detection could be followed by digitalized criteria of clients and their highlighted histories. Instead of using the same dashboard or tools across all countries, the parent company of foodpanda should develop a country-specific unique system that takes into account each country's particular threshold and fraudulent actions. The Support Vector Machine algorithm and neural networks are two machine learning techniques that would be quite helpful in this situation because consolidating fraud detection will increase complexity and data points.

3.7 Conclusion

The purpose of this study was to shed light on the importance of the risk and fraud system and to review the existing fraud detection practices adopted by the popular food delivery service foodpanda. To do so, the study drew a comparison with the fraud management systems used by financial institutions with high risk financial transactions. Upon analysis, it has been found that foodpanda's fraud detection system is still somewhat traditional and has several limitations. Moreover, it requires huge human efforts and manual checking to catch fraudulent activities. This increases time as well as operational costs. As much time is taken to detect fraud, it also bears huge financial losses.

From a managerial perspective, this study has provided useful insights on how to improve the existing fraud management system. This study discusses modern approaches of detecting fraud using machine learning, namely neural networks and support vector machine algorithms. This study provides an insight about the benefits of using such technologies to minimize operational costs as well as enhance the entire process.

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