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Chapter 1

Introduction

A system is an ordered, hierarchical grouping of separate components that cooperate to achieve a strategic objective within a specified time and budgetary framework.

Since 2006, the locally owned software development company Brain Station 23 Limited has provided software and IT solutions to the local and global manufacturing, retail, pharmaceutical, telecommunication, and financial technology industries. Over 600 software developers are now working for the business. In addition to Bangladesh, Brain Station 23 is now a well-known brand in the US, UK, Netherlands, Denmark, Japan, Norway, Sweden, Germany, Canada, Switzerland, Turkey, and other nations. As part of its ongoing corporate social responsibility (CSR) efforts, Brain Station 23 last year took a number of steps for the betterment of the underprivileged children of the society.

1.1 Vision

Being the partner with the quickest digital transformation and innovation via the use of global talent will help us make a difference, serve our nation by putting brilliant individuals to work, and increase foreign remittances along the way.

1.2 Mission

- To become your trusted companion for digital leadership.
- To use our enthusiasm for technology to provide success and pleasure to our clients and staff.
- To empower people to achieve more with less.
- To provide high-growth chances for satisfying work that benefits mankind.

1.3 Objectives

Like any other commercial enterprise, software businesses have short- and long-term financial goals that include surviving, maximizing profits, increasing sales and cus-

tomer satisfaction, and fostering economic growth. However, IT businesses can also have non-financial goals, such lowering environmental impact and boosting staff satisfaction. Non-financial goals, often connected to moral concerns and how customers perceive the business, can have a positive impact on long-term profits. Additionally, Brain Station 23 maintains specific goals in order to turn a profit, such as:

- *Short-term financial goals:* Some short-term goals, like survival, refer more specifically to small startup IT organizations, but they can also serve as the primary goal for larger IT firms during times of economic crisis. IT firms' short-term goals also include those that are focused on a certain time frame, such as the financial year.
- *Long-term financial goals:* Maximizing profits is also short-term goal. IT businesses frequently strive for long-term financial success with their goods and services. In order to allude to long-term financial goals, the expression "satisficing," which has to do with minimizing manufacturing costs, started to be used in conjunction with profit maximization. Growth in a company refers to the expansion of more goods and services, which in the IT industry are more transitional.
- *Non-financial goals:* By using less energy in their offices, IT companies can become greener businesses. Utilizing energy-efficient light bulbs, boilers, and air conditioners, as well as encouraging staff to turn off laptops before leaving the office, they can accomplish this goal. By employing recycled and biodegradable materials and minimizing packaging in their products, IT companies can lessen their environmental effect. Along with career programs that offer cash incentives for additional education, green objectives can also help to increase worker happiness. Additionally, brain station 23 is concerned with these non-financial goals.

1.4 Policies

The rules and expectations of your firm are established by a set of internal guidelines called corporate policies and procedures. They assist you in explaining to staff what they can and cannot do as well as the proper methods. These guidelines are adhered to by Brain Station 23 as follows:

Open Door Policies

Anyone can contact anyone within the organization due to its open door policy if they find any issues or wish to talk about official issues that they are unsure of. It will never be interpreted as a disparaging comment.

Even anyone can feel free to contact CEO if they find any problem with

- Their work/ want to work on any other interesting project
- Project manager
- Salary
- Anything and everything that is bothering them

Initially anyone can communicate with line manager, project manager, HR or even CEO if any situation comes up that they are feeling about quitting their job for any

organizational or personal issues. They are always open for discussion.

Leave Policies

Leave year will be considered from 1st July of a year to 31st June of next year (i.e, 1st July 2023– 31st June 2024).

Types of Leave: - Annual Leave - Casual Leave - Sick Leave - Maternity Leave - Paternity Leave

1.5 Leadership Values

- Ownership - Take Responsibility And Own The Challenges.
- Agility and Excellence - Deliver The Best Solutions, And Stay Agile Beyond Boundaries.
- Honesty - Say What You Think And Do What You Say.
- Passion and Commitment - Be Reliable, Dedicated, And Smart Working.
- Team Spirit - Be Humble And Value Relationships.

1.6 Technological Solutions Provided

From 2006 to 2022, the company has not only grown significantly but also has evolved to become the leading Software Development and IT Service Provider company in Bangladesh. They have made it next in terms of global reach and gained a reputation in the course. Here are some of the services they provide:

Banking Solution

They give customers the freedom of banking from anywhere and anytime. They provide a complete range of the most secure software solutions developed for banking businesses and 6 financial institutions. Their offered solutions support mobile banking, online bill payments, remote access to accounts, online transactions, and many more on-demand banking services. Their futuristic solutions help to empower financial institutions to be more competitive and develop a lasting customer experience. By embracing the latest technologies, they build customized banking solutions and dedicated mobile apps to leverage customer reach-ability and enhance flexibility.

App Development

With a large portfolio of industry-leading mobile application development services, they know how to translate their solutions into the result of business growth. They work on cross-platform, responsive mobile apps. Where others struggle, they thrive for the most attractive user interface and secure backend. Team Brain Station 23 provides the cutting-edge mobile app development service to diverse industries and clients including large-scale organizations and startups similar to Uber. Their

dedicated developers of different platforms build enterprise-oriented mobile apps to best suit a business. Integrating trendy and smart notification features and secure payment gateways, they create a constant digital presence and enhance customer engagement. Their app development team has already developed customized mobile apps for the Banking, E-commerce industries, and Augmented Reality or Virtual Reality platforms. They also have an amazingly dedicated team to develop mobile games.

AEM Development

Adobe Experience Manager or AEM is an excellent CMS for enterprises that have brought the powerhouse combo of the Content Management System (CMS) and Digital Asset Management (DAM) system together. With the natural connection to Adobe Creative Cloud, one can now get content to market faster and can create personalized experiences with your customers' expectations. By AEM, anyone can optimize their IT investment in marketing and leverage the full power of the digital experience platform to meet unique digital marketing needs. Brain Station 23 offers AEM development with implementation, integration, managed service along with intense customization for the AEM platform. Brain Station 23 also offers migration and upgrades with the help of an expert's hand so that none has to take any hassle.

Machine Learning (ML) and Artificial Intelligence (AI)

ML integration helps businesses to contextualize data and significantly reduce efforts to transform data sets for better insights. And AI integration takes business to a different level where one can speculate the future scopes or limitations before taking any major step. These applications thus for different business verticals are being adopted fast according to respective business operations in different industries. Their advanced solutions are built with the latest technologies and with intensive customization to serve the business needs according to the demand.

Cloud Solution

Brain Station 23 offers a wide range of cloud support and cybersecurity services to fit your business applications. They are a team of certified cybersecurity experts and proud official partners of Amazon Web Services (AWS), Microsoft for Azure cloud support. They give access to their AWS and Microsoft certified professionals and tools to guarantee that the client's infrastructure is secure and scalable.

Application optimization, Cloud maintenance, Migration, DevOps, E-commerce cloud hosting are some of the areas of Brain Station's expertise. They offer the most reliable, secure, and scalable AWS, Azure, and Google cloud computing services through their certified cloud architects and security experts. Their experts are at the client's service to assist in building a robust cyber defense solution managing the new emerging threats in the changing cyber landscape.

Business Intelligence (BI)

Business Intelligence is a technology-driven process for analyzing data and presenting actionable information to make savvy business decisions. Business intelligence tools help with improved decision-making, optimized internal business processes, increased operational efficiency, and drive new revenues by gaining a competitive advantage over business rivals. Their tech experts help clients to identify market trends and spot business problems that need to be addressed by implementing specific BI solutions his/her business needs to adopt.

Enterprise Resource Planning (ERP)

ERP solutions are flexible enough to transform business processes and achieve the potential of agile growth. Brain Station-23 offers affordable implementation and future customization.

As a flagship product for enterprise businesses, ERP 23 provides organizations centralized business control with increased productivity along with more customer onboarding and retention. Their powerful and easy integrable ERP system enables interactions of marketing, sales, quality control, products processes, supply lines, stocks, and many other areas within a single database.

1.7 Industries Served

Banking and Fintech Solutions

- Internet, Corporate, Retail, Mobile Banking
- Card Services
- Foreign Direct Investment Automation
- Cyber Security and Audit extensive customization

Enterprise Resource Planning and Implementation (with Odoo)

- Customer Relationship Management (CRM)
- Human Resource Management
- Inventory, Purchase, Sales, Accounting, Maintenance, Support, Migration and Update
- Mobile enterprise resource planning

Electronic Commerce

- nopCommerce
- Magento
- WordPress
- OpenCart

- PrestaShop
- Custom and Plug-In Development

Cloud and Cyber Security Organizations

- Azure
- Amazon Web Services
- Rackspace
- Cloud Migration
- DevOps

Augmented and Virtual Reality Solutions

- HTC Vive
- Oculus Rift
- Android, iOS, Windows

Application Development

- iOs, Android, Blackberry
- Windows
- Cross-platform application

1.8 Global Partners of Brain Station-23

- Brain Station 51, Germany
- Gesture, Norway
- Accelerance, USA
- Brain Station, Australia
- Brain Station, Netherland
- Brain Station 23, Japan

1.9 Revenue

Brain Station 23 as an offshore IT service providing company has been providing outsourcing service for 13+ years. Brain Station 23's annual revenue was about BDT 40 crore in 2019. Currently, it has 370 software engineers. Brain Station 23 is the name of Innovation and Digitalization for Enterprises and SMEs. And ensuring the following items meet global standards for IT outsourcing.

- Have 70 percent revenue from outsourcing

- No product, only service, best non-compete
- Best processes in place to attract and retain
- Yearly recruiting around more than 80 with 35 percent plus growth
- Invested by most prominent and first VC

1.10 Awards

This company is ISO 90001 and 27001 certified company with incredible achievements and recognitions.

- National Productivity and Quality Excellence Award 2019
- BASIS Outsourcing Award, 2013, 2014, 2015
- BASIS ICT AWARD 2018, 2019
- HSBC Export Excellence award in SME category, 2012
- Champion: Code Warriors' Challenge, 2014
- Champion: National Hackathon 2014 Smart Phone App Contest
- The Daily Star ICT Award 2017

1.11 Organizational Structure

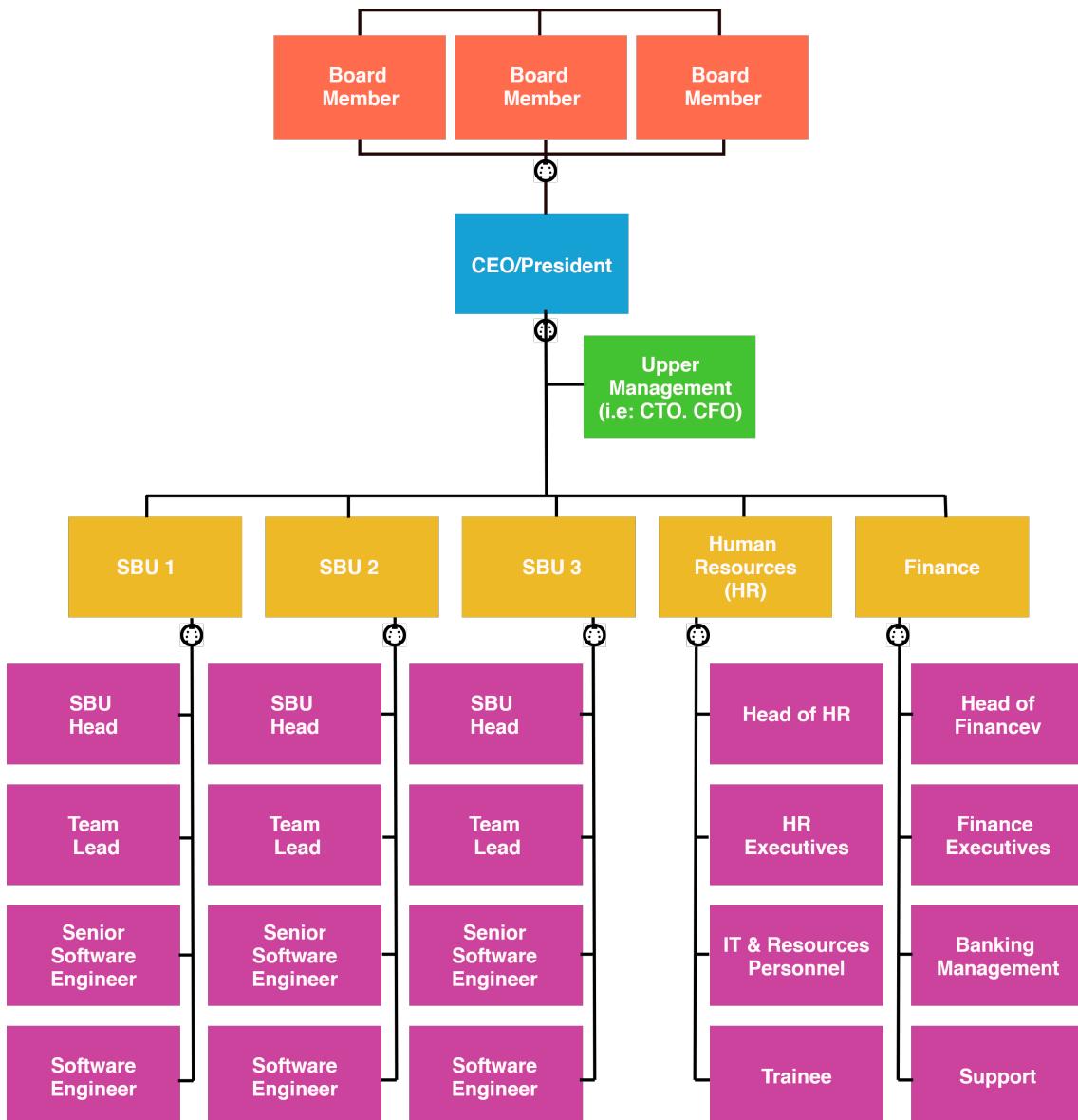


Figure 1.1: Organizational Structure

1.12 Analysis

Brain Station 23 Limited is a software development company which is relatively young. Being a local s/w company, this company has some global partners also. Their visions and missions are clear. Their objectives are also well defined. As they uses open door policy, anyone in the organization can access anybody including CEO. This policy reduces the possibility of miscommunications. Their leave policy devides the leaves in five types. Their leadership values are combination of interpersonal and intellectual values. They provide a wide range of the technological solution.

1.13 Conclusion

This chapter gives some surface level information about the system runs in Brain Station 23. It tells the vision, mission, objectives, policies, services provided, organizational structure, revenue, awards etc. From the initial study of this system, it is visible that Brain Station 23 it tries to maintain the international standards which includes employee benefits, CSR programs, good environment etc. It is also widely known to employ freshers.

Chapter 2

Recognition of Need(Initial Investigation)

2.1 Improvement of Fresher Recruitment Procedure

Recruitment is the core process of any successful organization. It is a process that involves everything from identifying, attracting, screening, shortlisting, interviewing, selecting, hiring and onboarding employees. The recruitment teams can be large or small depending upon the size of an organization. However, in smaller organizations, recruitment is typically the responsibility of a recruiting manager. Many organization outsource their recruiting needs ,while some companies relies exclusively on advertisements, job boards and social media channels to recruit talent for new positions. An efficient recruitment process is an organization-specific sourcing model that aims to find the right fit for the right job at the right time. It is a step-by-step process for bringing in talented people who can help the company grow. But an unexpected event occurred in Brain station 23 during the recent recruitment process. The recruitment process of brain station 23 is divided into 4 parts:

- Online M.C.Q test
- Coding test
- Assessment test
- Technical interview and HR interview

In the recent recruitment process for the coding test part, some coding problems have been repeated from a renowned online judge (Codeforces.com) whereas the coding problem should be creative and new. So this kind of incident hampers the recruitment process. Moreover, the online M.C.Q test should be done in such a way that no help over the internet can be taken by any candidates. The offline process of part 3 and 4 have no problem but the online process should be abandoned if necessary steps cannot be taken against such a mischievous event.

2.1.1 Online MCQ Test

This remote online test lasted for an hour and the topics were limited to the database, basic OOP concepts, data structure, output tracing, and analytical abilities. It covered pretty much very basic concepts. So the only challenge someone will feel is to manage to answer all the questions within the given time constraint. Those who are selected here will participate in the coding test.

2.1.2 Coding Test

For those who are involved with problem-solving in their university life, this is not so hard for them. Candidates should utilize the Codeforces and the HackerRank platforms to practice implementations of various data structures and algorithms. There will be 3-5 problems to solve. Candidates can use any language according to their preferences. There will be no restriction on this.

2.1.3 Assessment Test

The assessment test will happen at the Brain Station 23 office where the selected few candidates will be asked to spend the entire day. Initially, there will be some fun activities arranged for the candidates and afterward, they will be divided into groups. Each group will be given a task and will be mentored by a Software Engineer at Brain Station 23. The task will involve designing a solution to a given problem with the help of E-R, UAT, Context Diagrams, or Flow Charts. Also, individual members in a group will be given specific problems that they need to solve and will be interviewed by their respective mentors. At the end of the day, each of the groups has to present their solutions. During the process, the mentors monitor the candidates.

2.1.4 Technical Interview and HR Interview

After passing the assessment test, the candidate will go through the technical interview first and then, the HR interview. They will be asked questions from their resumes, such as the projects they had completed in their university, their research publications, previous job experiences(if exists), and so on. Then, they will be given a few problems to solve and will be asked about their choices of approach, the time complexity of their solutions, and so on. In the HR interview, they will be asked a couple of questions about their backgrounds, their interests, and their preferred tech stack. Those who perform well get the appointment letter from Brain Station 23 in a few days.

2.2 Reconstruction of Salary Structure

The present salary structure does not have any accordance or compatibility with the world market right now. Given that the dollar rate continues to keep rising and since this company has a large business with foreign clients who deal with dollars , this company is facing economic trouble as they are dealing with Bangladeshi currency which just keeps falling down. The loss this organization faces while trading

with those foreign clients are compensated from employees' salary. Another worrying fact is that the salary of their employee doesn't increase with the way the current inflation is taking place in our country. Another notable fault about their existing salary structure is that they do not deservingly rate and pay the interns. The juniors working over there are given a lot of tasks and kept under pressure but still their starting salary is quite low compared with other IT companies

2.3 Transparency About Bonus and Compensation

The employees of Brain Station 23 get four quarterly bonuses, two festival bonuses, and one profit bonus yearly. The permanent and contract-based employees have informed that they have no clear idea about the distribution of these bonuses. On the other hand, if one employee fails to meet the required monthly working hour target, the company cuts off an amount from the salary as compensation. There is a lack of transparency in the calculation of the compensation amount.

One of the most crucial aspects of human resource management is compensation. For both employers and employees, pay is vital. Because it is one of the primary reasons individuals go to work, it is significant to the workers. The salary also has an impact on an employee's social standing, motivation, loyalty, and productivity. Again, it is crucial for employers since it generates a sizable amount of cash outflow for an organization. Benefits that are included in compensation include both monetary and non-monetary. Direct and indirect kinds of remuneration to the employee make up the two financial components. Incentives like bonuses, commissions, and profit-sharing schemes are all examples of direct pay. It also includes hourly and monthly rated earnings or salaries. Benefits like the provident fund, gratuities, health insurance, paid time off, corporate cars, furnished homes, retirement benefits, stock options, and similar items are all considered indirect compensation. The following non-financial rewards are included: demanding work, obligations, gratitude, a positive work atmosphere, empowerment, and others.

Research on compensation has been done domestically and overseas from various angles. In a survey of 24 small businesses in Dhaka, Rab (1991) found that the majority of the businesses (87.5%) paid one or more forms of allowances in addition to salaries. He discovered that approximately 7% of businesses offered holiday bonuses, 20% did so for medical expenses, and 20% did so for salary raises. Inadequate remuneration was identified as one of the primary issues at Khulna HardBoard Mills Ltd. in a case study (Taher, 1992) on the company's overall human management (HRM) procedures. In a book review from 2000, Chowdhury said that compensation has been a crucial component of HRM in a developing nation like Bangladesh where workers are frequently low-paid with few or no perks.

A robust employee benefits package is essential for raising morale and luring fresh talent to the business. The fundamental rights of each employee in a corporation are outlined in an employee benefits program.

To create an employee compensation and benefits policy in Bangladesh, follow these steps:

- Examine the project's scope and budget
- Evaluate the demands of the local workforce
- Conduct legal research
- Construct a compensation and benefits plan.

2.4 Conclusion

In conclusion, Brain Station 23 aims to improve its fresher recruitment process, salary structure, and transparency in bonus distribution and compensation calculation. The organization acknowledges issues with repeated coding problems, the need for a more secure online test, economic challenges, inadequate compensation for interns and juniors, and lacking transparency. These improvements are crucial for enhancing recruitment, ensuring fair salaries, and promoting transparency within the organization.

Chapter 3

Initial Feasibility Study

3.1 For Improvement of Fresher Recruitment Procedure

3.1.1 Statement of the problem

- Proper fresher judgment is not done and the real talented people are outcasts.
- Development process of the organization suffers in the long run.
- Name and fame of the organization can be downgraded.

3.1.2 Summary of findings and recommendation

If the recruitment process is not done with the correct procedure without any biasing effect, then the most potential and talented people cannot find any place to apply their talent and this makes them disappointed and the development procedure of organization will have to suffer in the long run because the non-productive people cannot give much more efficiency in solving any future problem. The reputation of the organization also gets down. So to get rid of that kind of problem the recruitment process should be done in such a manner that no unexpected event can take place.

3.1.3 Details of the findings

Recently, the recruitment process of Brain station 23 has made a faulty step that caused controversy regarding the company. In the coding test, two or three problems were from an online judge. Their solutions were already known or available on the Internet. Hence, the coding test was not fair and this lags the recruitment process much more behind.

3.1.4 Recommendations and conclusions

The online phase of the recruitment process should be discouraged. If the online process is a must, then an AI-based system should be introduced to make the process fruitful. For the coding test, an offline coding test is acceptable. An online test is not the correct way to judge candidates. The recruitment team should consist of

good problem solvers who can make new problems based on new ideas which need in-depth algorithm and data structure knowledge.

3.2 For Reconstruction of Salary Structure

3.2.1 Statement of the problem

- The present salary structure lacks balance with the present economy.
- Salary of employees is not increasing with the inflation happening in the market.
- The juniors are not being paid in the right way.

3.2.2 Summary of findings and recommendation

The existing system does not solve the problem mentioned above effectively since the salary structure is not defined well.

To solve all the problems regarding salary issues, what is recommended for that is to maintain economic balance when dealing with foreign clients when the dollar rate fluctuates quite often.

Increasing Employees' salaries is one of the best ways to motivate them and get the best out of them. So rather than giving them the salary written on the document, this should be increased when prices of necessary commodities keep rising.

And to treat the interns or the juniors well, they must be given what they deserve so that they can be inspired all the time and do better later.

3.2.3 Details of the findings

The problems discussed earlier are correlated with each other. Since a large portion of the company's profits comes from foreign business, the fluctuation of the dollar rate plays a vital role in gaining profit. Since the world economy collapsed due to various reasons, that affected this company's economic growth and resulted in damaging employee structure too. And like many other companies, here in some cases, juniors are paid less than what they actually should be paid for how much effort they put in.

3.2.4 Recommendations and conclusions

Necessary methods must be taken for the sake of the betterment of the company and its employees as well. They must understand how currency fluctuates at different times and how they should tackle it. For example, if the rate of foreign currency increases and local currency drops by a significant amount, then they should focus on local clients rather than targeting foreign clients. And the profits they make must be used on increasing employees' salaries for the hard work they did.

3.3 For Transparency of Bonus and Compensation

3.3.1 Statement of the problem

The employees do not have clear ideas about the calculation of bonuses and compensations. Employees want transparency around that because it helps them understand how their performance directly relates to their pay. If the bonuses are not going to be feasible in a company's compensation plan, management should not be afraid to communicate that.

3.3.2 Summary of findings and recommendation

A quarterly Bonus means an amount equal to (in the aggregate) 0.025aggregate principal amount of the Notes outstanding as of the last day of any fiscal quarter of the Company year. According to Section 2(65) of the Bangladesh Labour Act, 2006 and Labour Rules 2015, the employees who have completed at least one year of allotted work hours will get two festival bonuses yearly. Bangladesh Labour law 2006(Section 232) requires a company to pay five percent (5Profit Participation Fund, Welfare Fund, and Bangladesh Workers Welfare Foundation Fund at the ratio of 80:10:10. The employees stated that they are not sure whether the rules are being followed here or not.

The recommended solution to this problem can be-

- The permanent employees should know the equation of this calculation clearly.
- The Contract-based employees should have a clear idea of bonuses and compensation stated in their contract papers.

3.3.3 Recommendations and conclusions

Most of corporate companies divide the salary amount by 208 and multiply it with 1.5 for compensation. And divide the salary by 270 and multiply it by 1.5 for the bonus. In this way, the employees are being deprived because the compensation amount is larger compared to the calculated bonus. Here, Brain Station 23 is not being accused of fooling its employees. But as the employees are in the dark, ultimately their performance is being hampered having a doubt in their minds.

3.3.4 For Transparency of Bonus and Compensation

It is recommended to reconstruct the equation of calculation of bonuses and compensations and show it clearly to the employees. If the organization thinks that sharing the equation of calculation with the contact-based employees can hamper their privacy, they may share it with the permanent employees only. Employees who understand how their performance affects their pay and how their compensation aligns with overall corporate goals are more likely to remain with a company long-term.

3.4 Conclusion

In conclusion, Brain Station 23 faces challenges in fresher recruitment, salary structure, and transparency of bonus and compensation. Recommendations include improving recruitment procedures, maintaining economic balance with foreign clients, and providing clear calculations. These measures aim to enhance talent acquisition, fair pay, and transparency within the organization.

Chapter 4

Information Gathering

4.1 Introduction to Information Gathering

Gathering information about the existing system is a key part of analyzing the feasibility of the candidate system. If the information gathering tools can be used properly the analyst is more likely to be successful. The traditional tools which are used for gathering information are interviews, questionnaires, and on-site observation. These tools help analysts access the effectiveness of the existing system and provide the design for recommending a candidate system.

Information can be gathered in several phases. For example, information can be gathered through available documentation, such as procedures manual, documents and their flow, interviews of the user staff, and on-site observation.

Moreover, an analyst needs to collect information about three main areas of the system. These are - information about the firm, the user staff, and the workflow.

First of all information about the organization's policies, goals, objectives, and structures are needed to be collected. The organization's policies help to determine the conduct of the system. Policies are translated into rules and procedures for achieving the organization's goal. The organization's commitment to objectives is described by the statement of goals. Objectives are milestones of accomplishments towards achieving goals. The organization's structure indicates management's directions and orientation.

The second type of information required for analysis is knowledge about the people who run the existing system. An analyst should focus on employee roles, authority relationships, job status and functions, information requirements, and interpersonal relationships. Briefly, it can be said that the analyst should find out the people with whom he/she is going to be dealing.

The third and last type of information is about the workflow of the system. Mainly, workflow focuses on what happens to the data through various points in a system. This is mainly shown in a Data Flow Diagram (DFD).

4.2 Information gathering tools

For gathering the information, we have to go through many processes. This process is known as an information-gathering tool. These tools give an analyst the way of gathering information perfectly and completely. These tools are analyzed and followed.

4.2.1 Review Papers

We have found news about Brain Station 23 across various reputable newspapers, online portals, as well as on social media. These sources have reported on various aspects of the corporation, including services, successes as well as financial policies. We have also garnered reviews and leaflets across social media sites for Brain Station 23. Here we have attached some of them:

- **News on Brain Station 23 in The Daily Star**

Link to the article - <https://www.thedailystar.net/business/news/brain-station-23-the-homegrown-fintech-firm-enabling-local-banks-go-digital-1952185>

The screenshot shows a news article from The Daily Star. At the top left is a world map titled "BRAIN STATION 23'S GLOBAL REACH 2019". Below the map is a blue banner with the text "BRAIN STATION 23'S GLOBAL REACH 2019". To the right of the map, the article title is "Brain Station 23: the homegrown fintech firm enabling local banks go digital". The main text discusses a deal between Brain Station 23 and Modhumoti Bank to develop a digital banking platform. At the bottom right of the article area is a small "...".

- Report on BS-23's Success in The Business Standard

Link to the article - <https://www.tbsnews.net/features/panorama/secret-brain-station-23s-success-flexibility-creativity-and-spreading-ownership>

The screenshot shows a news article from The Business Standard. At the top left is a photo of two men in an office setting, one wearing a headset. Below the photo is the text "THE BUSINESS STANDARD". To the right of the photo, the article title is "The secret to Brain Station 23's success: Flexibility, creativity and spreading the ownership". The main text discusses the company's team size, projects executed, and work policies. At the bottom right of the article area is a small "8".

- Report on BS-23's Financial Policy in Future Startup Link to the article - <https://futurestartup.com/2016/12/27/brain-station-23-raises-new-funding-from-bd-venture-and-ipe-capital/>

**Future Startup****Brain Station-23 Raises Funding From BD Venture And IPE Capital, Plans To Push Growth - Future Start...**

Brain Station-23, the local IT solutions provider, has raised an undisclosed amount of funding from two local investors BD Venture Limited and IPE Capital.

4.2.2 Onsite Observations

On-site observation is a method of gathering information by noticing and observing the people, events, and objects. The analyst visits the organization to observe the workflow of the current system and understands the requirements of the system. The main objective of an onsite visit is to get as close to the real system as possible.

Profitable Organization

Brain Station 23 Limited is a homegrown software development company and its main mission is “To create success & happiness for our customers & employees with our passion for technology while creating high growth opportunities of fulfilling employment thus serving humanity.” The sources of income include the money earned by selling software and services. The salaries of the employees are met by the money earned from this.

Brain Station-23 Office

This company has three offices in Dhaka. All of them are in the Mohakhali area. There's a nice parking space on the ground floor. The different sections of the organization are located in different offices.

- Entry Gate



Figure 4.1: Entry Gate

- Scrum

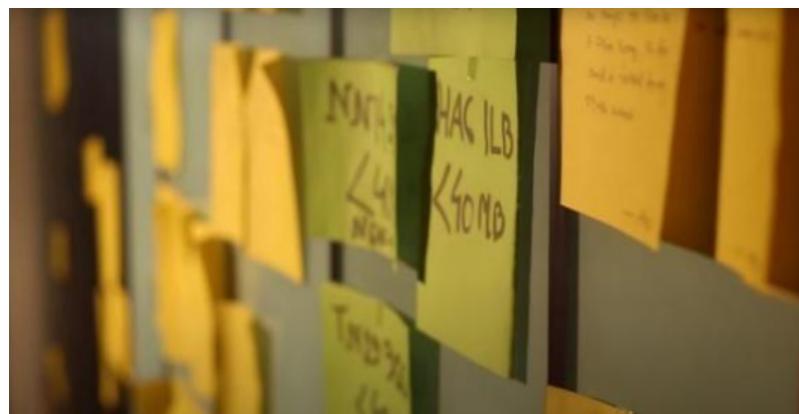


Figure 4.2: Scrum Board

- Meeting Room



Figure 4.3: Meeting Room

- Office Space



Figure 4.4: Office Space

- Events

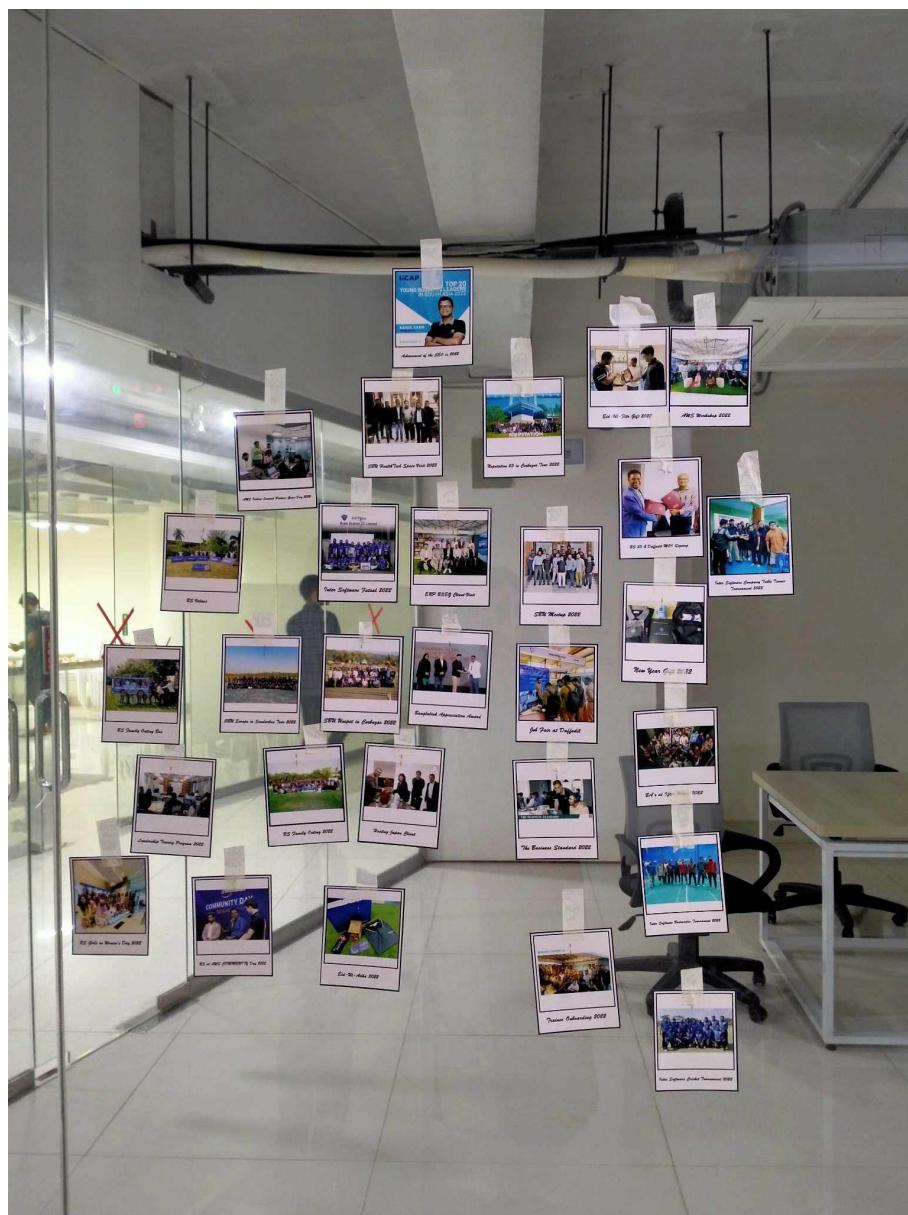


Figure 4.5: Memories of Events

Direct Observation of Brain Station-23

Direct observation technique was used for observing the Brain Station-23 Office. A direct observation takes place when the analyst observes the system at work. This direct observation technique has helped in many ways. We get the opportunity to visit one of their offices. The following were observed during the onsite observation-

- This office has mainly one entrance with a well-decorated gate.
- There was a hall room where all of the software engineers have separate desks with their laptops, monitor, keyboard, mouse, headphones, etc. Everything is provided by the company. Employees don't need to take anything with them to the office. Almost 150 employees were working there at once. 27
- There are 4 meeting rooms. All of them have some facilities like a large screen TV, projector, screen sharing technologies, etc.
- Cyber Security and Audit extensive customization
- There was an interesting fact. We noticed the CEO Raisul Kabir, who is also the owner of this company, was working with all other employees. There was no dress code. Everyone can wear whatever they like. The environment was so friendly and cheerful.
- There is a separate room for the HR Department. Because their work is different from the software engineers.
- The company uses a fingerprint-biometric system for employee attendance.
- The whole environment is nice and clean in all manner

Interviews

Interview is a two-way conversation. It is a personal form of communication between two people. It is a beneficial process for both the interviewer and the interviewee. The interviewer tells the applicant about the job preview and helps the interviewee make his mind about whether or not he wants to take that job. Though conducting interviews is not based on fixed rules, certain guidelines for the interviewer and interviewee can make the interview an effective process.

We cannot learn everything about the system only by observing the facts as they happen. To enter deep into the system we need to learn about people's perception, feelings, or motivations. For this purpose we need to use other information-gathering tools. We have conducted two additional methods to gather information about the system. They are interviews and questionnaires. By interviewing people from different levels of the hierarchy we were able to learn about such areas which are not possible to explore. By interviewing various types of hidden information are possible to gather. For conducting interviews we selected people from a different level of the institutions. They are-

- Internet, Corporate, Retail, Mobile Banking
- Chief Executive Officer Of Brain Station
- Chief Technological Officer of Brain Station

- HR & Admin Of Brain Station

Our Interview with the Chief Executive Officer Of Brain Station

Question: Why did you start (or want to be CEO of) this company?

CEO: I started because I didn't like the so-called "Boss" trajectory because Boss is someone who is in charge and dominates over others.

But a true leader takes care of his/her pack and lets people bloom in their own way. And I've always tried to work my way out of general norms and to be a true leader. Helping the team to arrive at an efficient solution has been my target all the way and that is my reason.

Question: What goal do you have for the company?

CEO: Constantly innovate and hold value. better employee churn rate and positive GMV.

Question: What do you feel is the biggest strength of our company right now?

CEO : Biggest strength of our company is that our team members are properly aligned, so we have less conflicts and more productive work.

Question: What was the path you took to get to where you are today?

CEO: Path was not straight, rather a lot of ups and downs. If it weren't for the dedicated co founders and members who believed, it wouldn't have been possible to reach where we are today

Question: What have been the biggest challenges you've had to overcome?

CEO: The biggest challenges are rather the little smaller ones that we need to face everyday. To really trust your members, put in the work everyday not just a week or some other week but every single day at the same pace is the biggest challenge so far and the excellent team has already overcome that by flying colors.

Question: How many people are working at present in the organization?

CEO: There are around 200+ people working here.

Question: Are you and your managers having 1 on 1s with your staff?

CEO: Well, 1 on 1s are an essential tool to fix problems, coach people, build relationships, and talk about all the things that no one gets around to otherwise. When a company is in its early days, it's easy to think that getting beers, social outings, and a tight-knit team is enough. Unfortunately, it's not. So I always encourage my managers to keep in touch with their staff. But due to the workload that isn't always a plausible case. As work loads extend we may not have 1-1 outing or chill time but what our company offers is a fun environment for learning and growing and being friendly with each other. so our work space is more like a community gathering who believe in the same thing, have some clear motivation and relentlessly work on that together. I think we are much more than just 1on1s.

Question: What is most important to your organization—mission, vision or values?

CEO: We have only one vision and that is to build an infinite organization. We don't see our competitors as rivals but admire where they are better than us and work on weaknesses to improve; where people are not afraid to ask for help and rush to help others. Because when this happens, innovation skyrockets, cooperation skyrockets, and the ability to change in technology skyrockets.

Question: What is the best and the worst part of being a CEO?

CEO: Best part of being a CEO is that you can see the beauty of a bunch of strong personalities working hard and growing and the worst part is that when you realize it's not gonna be forever.

Question: What is the one thing you would change about the company?

CEO: To build the belief among the members so that all can look beyond what they already have and what they are now. Because improvement is limitless.

Our Interview with Chief Technological Officer Of Brain Station

Question: Tell us a little about your company. What do you do here?

CTO: Well I look over the technical side in this company. How the team will work, how the product will be developed, what will be the timeframe, what development model technologies we will follow; these are some of the things that I basically work with. After analyzing business goals, I develop a technical strategy for the company. This step requires collaboration with co-founders in order to align the strategy with the business vision.

Question: Tell us about your professional journey. What led you to this point?

CTO: I always had a keen perspective to solve real life problems. From that thought I started software development. That gave me a wonderful opportunity to create exciting softwares for different platforms. After graduation me along with my co-founders and friends, started the journey of Brain Station.

Question: What programming languages and development methodologies do you prefer?

CTO: I always prefer the AGILE software development process. Agile software development is more than frameworks such as Scrum, Extreme Programming, or Feature-Driven Development (FDD). Agile software development is more than practices such as pair programming, test-driven development, stand-ups, planning sessions, and sprints.

Agile software development is an umbrella term for a set of frameworks and practices based on the values and principles expressed in the Manifesto for Agile Software Development and the 12 Principles behind it. When we approach software development in a particular manner, it's generally good to live by these values and principles and use them to help figure out the right things to do given your particular context.

And as for programming languages, I prefer python in many scenarios because python has a very powerful collection of libraries & can be used for many different purposes.

Question: Tell me about the last hire you made. What was your process and who did you hire? Why did they stand out?

CTO: Our last hire was made in January, 2021. We had two positions opened for one frontend developer & one backend developer. We have a fixed section in our website, career, where we post all our job offers. We basically mention job description, Educational Requirements, Responsibilities, What we are looking for, Benefits finally job summary. Other than the website, the job offer details were also posted in social media so that we can reach our potential candidates. A good number of freshers applied for the position.

An online interview session was held in the first week of February. Our hiring committee included the co-founders & some of the seniors developers. We talked with a couple of bright minds after a process of evaluation, we selected two for the job.

Question: Have you ever made a bad hire? When did you figure it out? What did you do?

CTO: This phenomena happened to me last year. I hired a talented fresher once, to work on the backend development side. But he was really bitter towards his teammates & seniors. That hampered the environment of the office. I came to notice that, when he insulted one of his senior co-workers in an ongoing meeting with the development team. He was notified about this & warned to maintain his behavior in the work-place. After that he realized his wrong doings got back on track.

Question: Have you ever had to let someone go? Why?

CTO: Yes I have. In 2019 we had an individual in our team who was really tough to communicate with. He was always out of reach in case of any emergency. He warned about this, but didn't pay any heed to this. So, eventually we had to fire him for a better candidate.

Question: What are some common security issues you've seen in startup codebases in the past? What steps did you take to mitigate them?

CTO: One of the common security issues is intruders in the github codebase. As a startup launches, the first few months are really crucial when one is building a team. When building a team, and building the MVP, one when asks for help, the first thing anyone does is give them their codebase access. And this later sometimes creates security issues.

Our Interview with an HR Admin Of Brain Station 23

Question: What do you want to say about your role in Brain Station 23?

HR & Admin: We, human resources admins are accountable for screening, interviewing, recruiting and placing employees. We manage employee relations, payroll, training etc. We plan, give directions to coordinate the administrative functions. We consult with executives on strategic planning and link the management with employees. I can say some typical daily tasks of us-

- Consult with admins to identify needs
- Interview applicants about their education, experience and skills

- Coordinate and supervise the work of employees
- Inform applicants about details of job such as conditions and benefits
- Hire or refer qualified candidates
- Give directions on disciplinary procedures

Question: Tell me something about your experience here.

HR & Admin: As a tech company, we give services in many kinds of technological sides. We provide development teams, project outsourcing, process consulting, quality control, technical consulting, IT relocation etc. We have partnerships with many kinds of industries like eCommerce, NGO, healthcare etc. We have already built many websites and apps for our clients. PHP, Python and Javascript are the most commonly used programming languages in our company.

question: What do you like most and least about your present position?

HR & Admin: The thing I like most here is I work with many tech enthusiasts. I really enjoy working with them here as I am also a tech enthusiast. Another thing is, in an IT firm, new challenges come continuously. The solving process, especially brainstorming is also a great experience. On the contrary, there is nothing I like least.

Question: How do you participate in planning and development?

HR & Admin: We, the human resource admins, perform as strategic partners. We do our part in the identification, development and execution of corporate objectives. We also align the work of our software development unit to achieve company goals. To aid in the sustainable growth of Brain Station, participation in company planning allows us to acquire a good understanding of the needed organizational activities.

Question: What kind of difficulties do you face in finding and recruiting employees?

HR & Admin: Actually there are many difficulties we have to face in whole recruiting process. Here are some of them:

- Attracting the Right Candidates: Recruitment options are limited. We have to choose the best person we can find at the time—not the best fit for the job. A lot of applicants turn out to be unqualified for the jobs. So, it's quite difficult to attract the correct person for the jobs. Finding the correct candidate is not always about the number of candidates who apply; the best way to hire the correct candidate is often from a smaller pipeline of more qualified talent.
- Recruiting Fairly: We try to ensure 100 percent fairness always. But unconscious biases happen sometimes. We are working on it. There is a method called 'blind hiring' such that human biases are reduced. We are discussing implementing it here.
- Creating an Efficient Recruiting Process: The time period of the recruiting process is limited. So, every sector related to it needs to be fast and effective. Hiring teams need to know what's going on every step of the way, communicate fast, and evaluate candidates easily. If recruiters' relationship with hiring managers is strained, the process is not always comfortable. Also,

administrative tasks (like scheduling interviews) often take away valuable time that recruiters could have used in coordinating the hiring process and ensuring a good candidate experience.

Question: Have you any comments about the candidates you face when recruiting?

HR & Admin: I have not much comment about them. But I think one thing needs to be said. The overall skill sets of the maximum candidates are not satisfactory. Compared to the number of applications, there should be more qualified applicants. Also, skills don't match with the educational qualifications of the candidates often.

Question: How do you conduct disciplinary actions?

HR Admin: We have our own policies and code of conduct. We always monitor all employee's disciplinary acts. We have an anonymous complaint box. Anybody can complain or give their opinion in that box anonymously. Whenever there comes a complaint against someone we investigate the issue and take actions according to our company policies.

Question: What do you do to manage the working environment of the company?

HR & Admin: We are always open to take suggestions. Periodically, we take employees' feedback about the working environment of our company and any suggestions about making it better. We then conduct a meeting, discuss with our CEO and admins to implement the suggestions. If we get approval, we then try to implement that in our company. We also conduct company tours and bonuses for good works such that none feels bored about their work. Thus, it is ensured that our employees always have a good working environment culture.

Question: Can you express your overall opinion about this company?

HR & Admin: Brain Station is a very renowned multinational IT firm in Bangladesh. The working environment here is very friendly and full of enthusiasm for employees. I like workplaces where there is an emphasis on both teamwork and autonomy. Collaborating with others, exchanging ideas, flexibility to work, etc. should be a must for any workplace I think. In addition to those, I value the absence of unnecessary restrictions, such as a casual dress code unless I'm in a meeting with a customer or a partner. I am very happy to say that all of these are present in Brain Station. I really like the overall environment here very much.

Questionnaires

Questionnaires can be an effective means of measuring the behavior, attitudes, preferences, opinions and intentions of relatively large numbers of subjects more cheaply and quickly than other methods. Questionnaires can be used as an alternative or in addition to an interview. The main advantage of using a questionnaire is that large amounts of data can be gathered in a short amount of time. The questionnaire shown below was used to collect information from the employees Brain Station. In the questionnaire, we used mostly Dichotomous and multiple-choice questions. Here one staff's response is shown as an example.

Information Collection Form: This form is to gather current information about Brain Station. This information may contribute to the improvement of the organiza-

tion. We appreciate your contribution to this, it will help us report more accurately on the current state of the organization. We would be grateful for the answer to the following questionnaire.

Sample Questionnaires

Questionnaires for Brain Station Employees

Question: Are you satisfied with your work space's environment?

Options:

- 1 (Not Satisfied)
- 2
- 3
- 4
- 5 (Very Satisfied)

Question: How do you cope up with totally new technologies used in newly developed products/services?

Options:

- Helped by advisor
- Self-learning
- Helped by team-mates and senior employees

Question: What should a company provide you to boost your capability in office?

Options:

- giving 1/more hrs leisure-time(ex: hobby, singing, reading)
- Giving certain amount of time for social-media/streaming anime,movies/gaming
- To take a nap and snacks

Question: How satisfied are you with your team-mates and coordinators?

Options:

- 1 (Not Satisfied)
- 2
- 3
- 4
- 5 (Very much)

Question: Does this job help you to achieve your goal?

Options:

- Yes
- No
- Maybe

Question: How much are you open/flexible with changing company culture?

Options:

- 1 (Not Satisfied)
- 2
- 3
- 4
- 5 (Very much)

Question: Do your managers value your work and give feedback?

Options:

- Always
- Sometimes
- Not at all

Question: How much do you feel connected with clients during production?

Options:

- 1 (Not Satisfied)
- 2
- 3
- 4
- 5 (Very much)

Question: How much do you feel connected with clients during production?

Options:

- 1 (Not Satisfied)
- 2
- 3
- 4
- 5 (Very much)

Question: How much Covid-19 affected your professional life?

Options:

- 1 (Not at all)

- 2
- 3
- 4
- 5 (Extremely)

Question: Are you satisfied with your working hours?

Options:

- Yes
- No
- Maybe

Question: : Do you give effort on your work without working hours?

Options:

- Yes
- No
- Sometimes

Question: : Are you satisfied with the access to resources, information of your company?

Options:

- Yes
- No
- Maybe

Question: : What would you improve if you could(in you and company)?

Options:

- I would be more open to connect with co-workers
- I would manage and create proper planning for production before-head
- Others

Question Analysis

Questionnaire Analysis for Brain Station 23 Employees

Question: Are you satisfied with your work space's environment?

Options:

- 1 (Not Satisfied)
- 2
- 3

- 4
- 5 (Very Satisfied)

Conclusion: From the data we received , what we have seen is over 50% of their employee are satisfied with the work space environment.

Question: How do you cope up with totally new technologies used in newly developed products/services?

Options:

- Helped by advisor
- Self-learning
- Helped by team-mates and senior employees

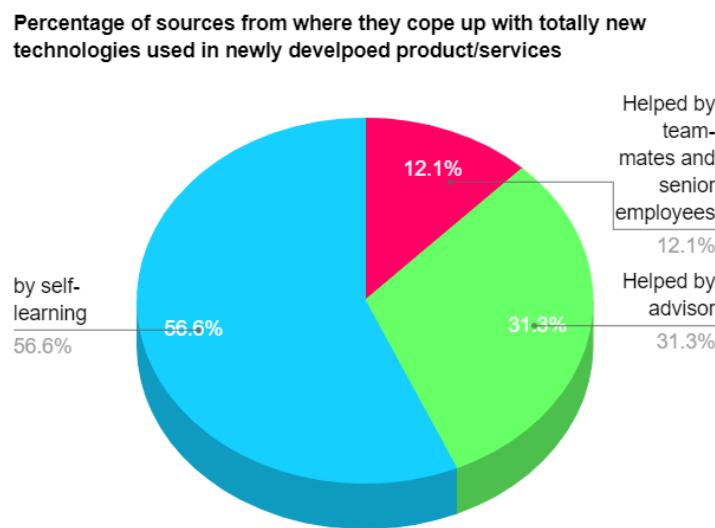


Figure 4.6: Percentage of sources from where they cope up with totally new technologies used in newly developed products/services

Conclusion: Most of them learnt by self-learning. So management should give training sessions and proper instruction for betterment.

Question: What should a company provide you to boost your capability in office?

Options:

- giving 1/more hrs leisure-time(ex: hobby, singing, reading)
- Giving certain amount of time for social-media/streaming anime,movies/gaming
- To take a nap and snacks

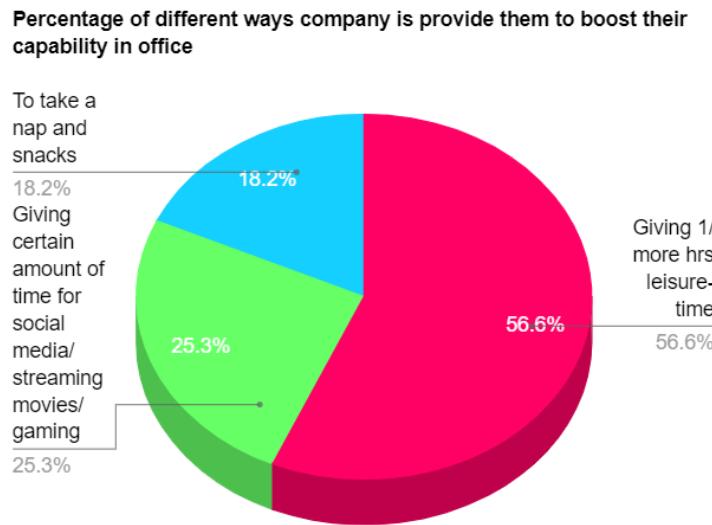


Figure 4.7: Percentage of different ways company provide them to boost their capability in office

Conclusion: Most of them want to spend at least 1 hour on a hobby as pass-time during office hours.

Question: How satisfied are you with your team-mates and coordinators?

Options:

- 1 (Not Satisfied)
- 2
- 3
- 4
- 5 (Very much)

Conclusion: Most of them are satisfied with team members and coordinators from the survey we made.

Question: Does this job help you to achieve your goal?

Options:

- Yes
- No
- Maybe

Conclusion: This job helps to achieve goals for most of the employees.

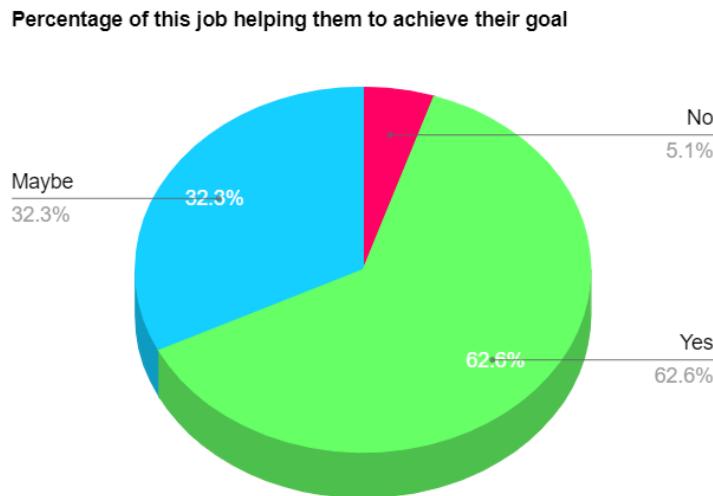


Figure 4.8: Percentage of this job helping them to achieve their goal

Question: How much are you open/flexible with changing company culture?

Options:

- 1 (Not Satisfied)
- 2
- 3
- 4
- 5 (Very much)

Conclusion: As per the statistics , most of the employees are working without conflicting with the company's changing culture which is beneficial to the company.

Question: Do your managers value your work and give feedback?

Options:

- Always
- Sometimes
- Not at all



Figure 4.9: Percentage of how much their managers value their work and gives feedback

Conclusion: Most of employees are not happy about getting feedback on their work

Question: How much do you feel connected with clients during production?

Options:

- 1 (Not Satisfied)
- 2
- 3
- 4
- 5 (Very much)

Conclusion: Most of the employees are working without having a direct connection with clients and sometimes don't know the production's future.

Question: How much do you feel transparent about the management?

Options:

- strongly
- Don't know
- Not at all

Conclusion: Most of the employees strongly feel transparent about the management.

Percentage of how much they feel transparent about the management

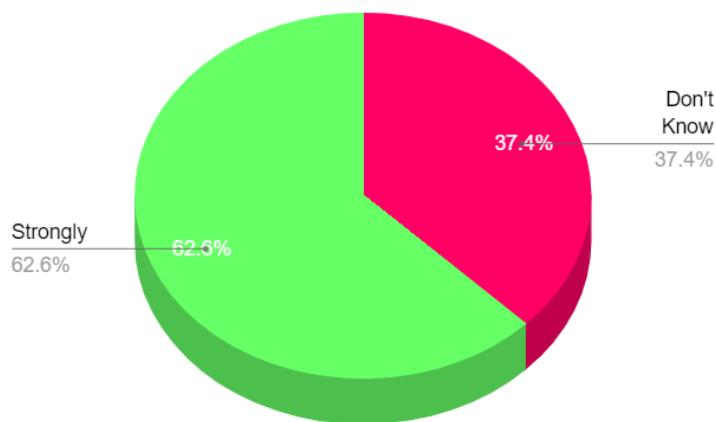


Figure 4.10: Percentage of how much they feel transparent about the management

Question: How much Covid-19 affected your professional life?

Options:

- 1 (Not at all)
- 2
- 3
- 4
- 5 (Extremely)

Conclusion: Most of the employees' lives are somehow affected by covid-19.

Question: Are you satisfied with your working hours?

Options:

- Yes
- No
- Maybe

Percentage of people being satisfied with their working hour

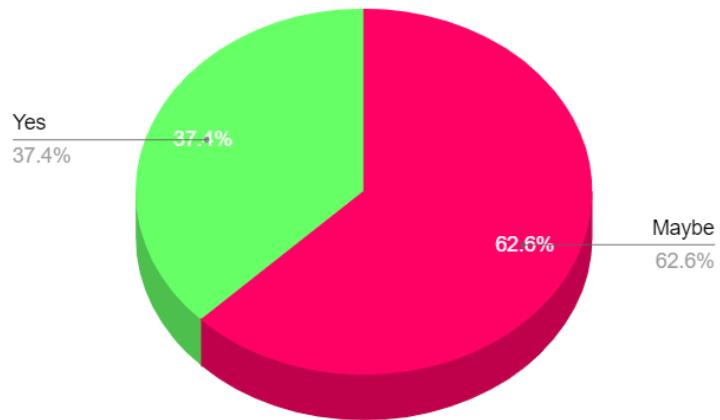


Figure 4.11: Percentage of being satisfied with their working hours

Conclusion: Most of the employees are not satisfied with working hours.

Question: : Do you give effort on your work without working hours?

Options:

- Yes
- No
- Sometimes

Question: : Are you satisfied with the access to resources, information of your company?

Options:

- Yes
- No
- Maybe

Percentage of people being satisfied with the access in resources, information of their company

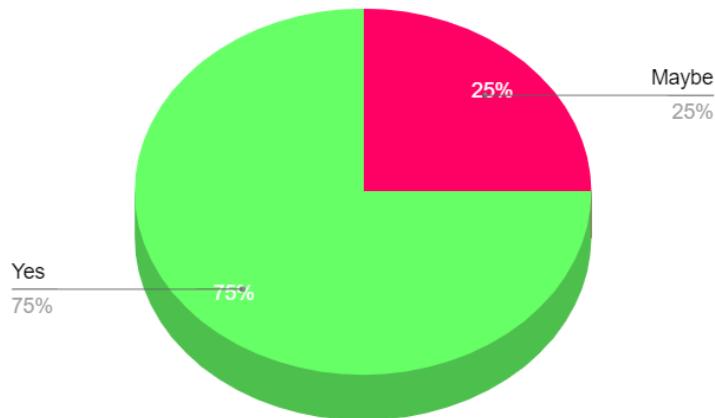


Figure 4.12: Percentage of being satisfied with the access in resources, information of their company

Conclusion: Most of the employees are satisfied with accessing resources with the company which is amazing.

Question: : What would you improve if you could(in you and company)?

Options:

- I would be more open to connect with co-workers
- I would manage and create proper planning for production before-head
- Others

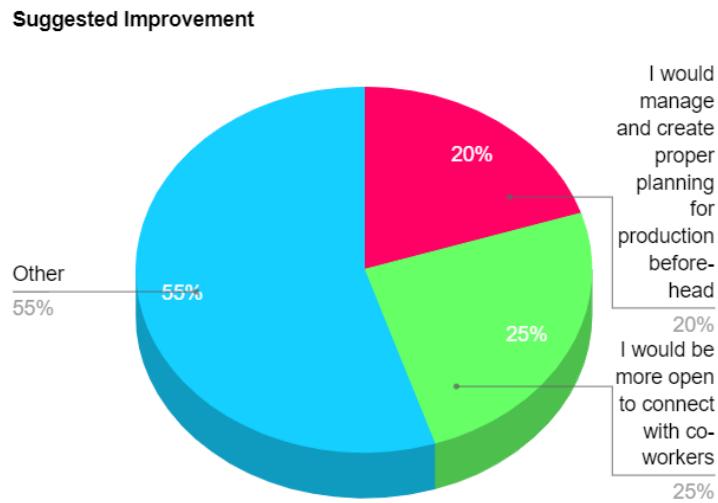


Figure 4.13: Suggested improvement

Conclusion: Most of the employees are open to communicate and help each other which ensures excellent team-work.

4.3 Conclusion

In this chapter the summary of the conversation with the CEO, CTO and HR Admin of Brainstation-23 LTD is discussed. A survey is also conducted using google form where the employee experience with their workplace is the main theme. The survey was successfully conducted between 30 employee's and the result was reflected in this chapter.

Chapter 5

Analysis of Existing System

5.1 Introduction to the Tools of Structured Analysis

Structured Analysis is a set of techniques and graphical tools that allow the analyst to develop a new kind of system specifications that are easily understandable to the user. It considers new goals and structured tools for analysis. The structured tools focus essentially on the data flow diagram, data dictionary, structured English, decision trees and decision tables. The objective is to build system specifications. In this chapter, the existing system of Brain Station 23 is depicted using some of these tools such as Data Flow Diagram and Decision Table.

5.2 Data Flow Diagram (DFD)

Data Flow Diagram (DFD) or Bubble Chart is a tool of structured analysis which clarifies the system requirements and identifies major transformations that will be made in system design. It is the starting point of the design phase that functionally decomposes the requirements specifications down to the lowest level of details. A DFD consists of a series of bubbles joined by lines. Bubbles represent data transformations and the lines represent the data flows in the system. In the DFD, there are four symbols -

- A square defines a source or destination of system data
- An arrow identifies data flow- a pipeline through which information flows.
- A circle or a bubble represents a process that transforms incoming data flow(s) into outgoing data flow(s).
- An open rectangle is a data store- data at rest or a temporary repository of data.

In the following, the entire existing system of Brain Station 23 is depicted using these symbols of DFD. A main DFD has been drawn to reflect the modules working behind the existing system. A process of the main DFD called Recruitment had to be divided into sub-processes, so it was drawn separately at the next page.

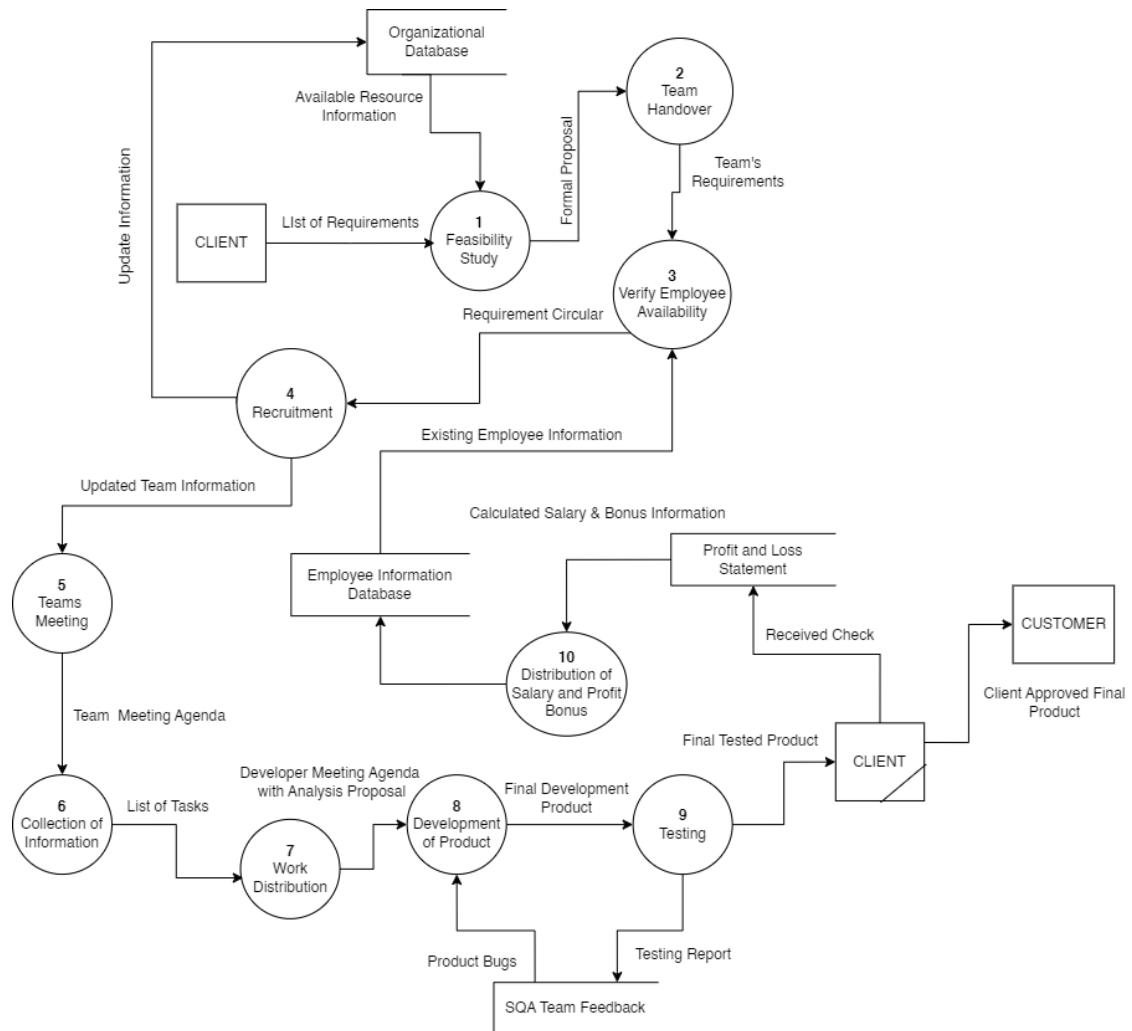


Figure 5.1: Data Flow Diagram for Existing System

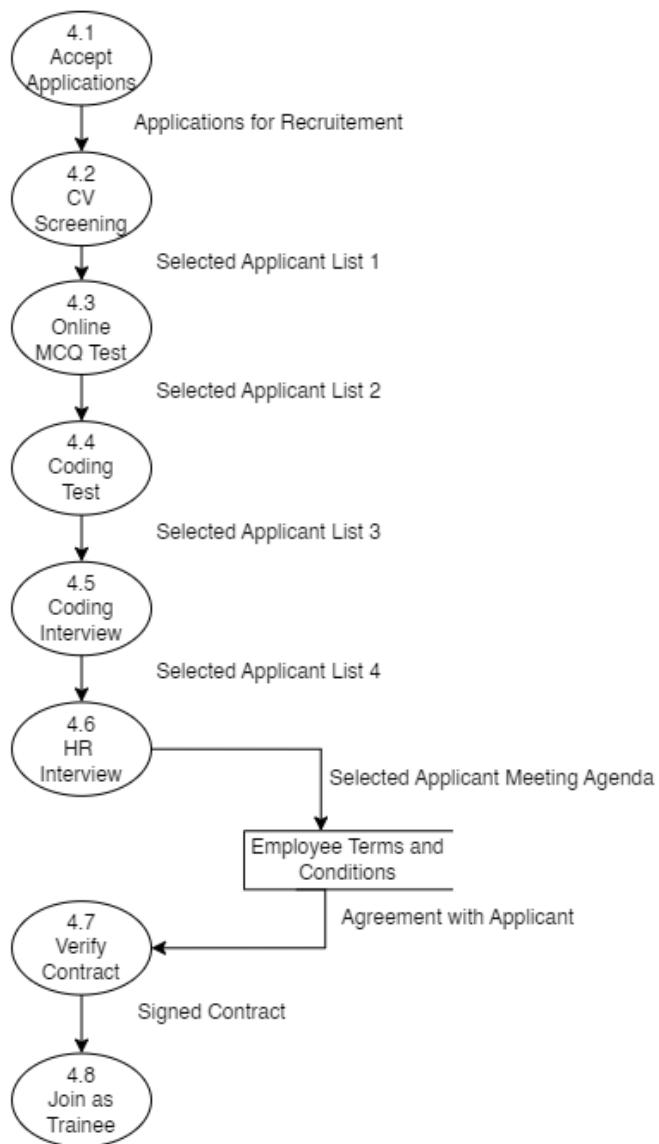


Figure 5.2: Data Flow Diagram for Existing System

5.2.1 Details of the Data Flow Diagram of Existing System

In the data flow diagram, we can see that,

- Initially, the organization collects requirements from the client. Then considering the available resources' information, the team prepares a feasibility report. On that basis, a specific team will be assigned to conduct the work.
- The assigned team checks if it has enough employees to complete the work. Otherwise, they appeal for the release of the recruitment circular.
- After that, a proper recruitment process takes place, which includes CV screening of the applicants, online MCQ test, online coding test, onsite coding interview, and onsite HR interview.
- The chosen applicants have to sign the agreement before joining as a trainee.
- The completed team calls a meeting, prepares a scrum board and gantt chart, collects the necessary information, and distributes work in sub-teams.
- Ultimately, they prepare a product and pass it for SQA testing. The testers check the product to find faults and report that to the developers repeatedly until they find no mistake apparently.
- The company handovers the final product to the client. The client pays according to the agreement. The company checks the profit and loss statement to calculate bonuses and salaries of the employees and distributes accordingly.

5.3 Decision Table

A decision table is a table of contingencies for defining a problem and the actions to be taken. It is a single representation for defining the problem and solution to be taken. It consists of two parts: stub and entry. The stub part is divided into an upper quadrant called the condition stub and a lower quadrant called the action stub. The entry part is also divided into an upper quadrant called the condition entry and a lower quadrant called the action entry. In the following, two decision tables have been depicted to reflect two different decisions to be made while working in the existing system.

Table 1. Decision Table for Recruitment as software Engineer(Trainee)

Condition Stub		Condition Entry					
		1	2	3	4	5	6
IF (Condition)	Applicants Passed Online MCQ Test?	Y	Y	Y	Y	Y	N
	Applicant Passed Coding Test?	Y	N	Y	Y	Y	N
	Applicant Passed Coding Interview?	Y	N	N	Y	Y	N
	Applicant Passed HR Interview?	Y	N	N	N	Y	N
	Applicant Accepted Terms and Conditions?	Y	N	N	N	N	N
THEN (Action)	Recruit as Trainee	Y	N	N	N	N	N
Action Stub		Action Entry					

Here, if the applicant has passed the online MCQ test, coding test, coding interview, HR interview and accepted terms and conditions for the employees of the company, then only, he/she can be recruited as a Software Engineer(Trainee).

Table 2. Decision Table for Bonus Distribution

Condition Stub		Condition Entry							
		1	2	3	4	5	6	7	8
IF (Condition)	Employed for More than 1 Year?	Y	N	Y	N	Y	N	Y	N
	Agreed Terms and Conditions?	Y	Y	N	N	Y	Y	N	N
	Permanent Employee?	Y	Y	N	N	N	Y	Y	N
	Achieved Targets?	Y	Y	Y	N	N	N	N	N
THEN (Action)	Allow Bonus Payment		Y	N	N	N	N	N	N
	Action Stub		Action Entry						

Here, if the employee has been employed for more than 1 year and agreed terms and conditions and achieved targets as per the contract, then the employee will be allowed to get a bonus payment based on the profit of the company.

Table 3. Decision Table for Payroll System

Condition Stub		Condition Entry					
		1	2	3	4	5	6
IF (Condition)	Permanent Employee?	Y	Y	Y	N	N	N
	Contract-based Employee	N	N	N	Y	Y	N
	Hours Worked <40	Y	N	N	Y	N	N
	Hours Worked = 40	N	Y	N	N	Y	N
	Hours Worked >40	N	N	Y	N	N	Y
THEN (Action)							
		X	X	X			
					X	X	X
				X			X
		X			X		
Action Stub		Action Entry					

Here, if the employee is permanent, he/she is paid on the base salary with the calculated overtime. But if the employee is contract-based, he/she is subject to the calculation of salary on hourly basis. In either case, if the employee works less than 40 hours per week, he/she has to report the reasons of absence.

5.4 Conclusion

In this chapter the existing workflow system of Brainstation-23 is discussed. The employee hierarchy and delivery system management and also the recruitment system of the company are collected and These are visualised on the DFD.

Chapter 6

Feasibility Study

6.1 Description of Candidate Systems

The present system of Brain Station 23 has been studied and investigated thoroughly. We have identified and discussed some problems of their system in chapter 2 and 3. After analyzing everything, we have concluded two potential candidate systems capable of producing more efficiency than the present system. The candidate systems have been described in the next section. The economic, technical, and behavioral feasibility considerations have been explained too. Then the characteristics of the system have been identified, the performance of each candidate system has been measured.

6.1.1 Candidate System - I

- The authority will appoint a separate board for the recruitment process, their work will only create creative questions for each step of the interview process. In this way, the proper judgment of the applicants will be ensured.
- The solution will not completely change the structure of the salary distribution, but the working flexibility of the employees will be increased.
- The solution will keep the calculation of profit, bonus and compensation secret. But the authority will ensure that no injustice occurs to the employees.

6.1.2 Candidate System - II

- A unique AI-based system will be introduced dedicated to only the recruitment process. In this way, there will be no bias or human-operated errors in the recruitment process. Moreover, the risk of leaking questions will not arise. The goodwill of the company will be increased.
- The salary structure will not completely change, but there will be room for negotiation and discussion among the employees and employers on that.
- This solution will introduce a panel to negotiate with the employees regarding the bonus and compensation. In this way, there will be no loopholes in the communication.

6.1.3 Candidate System - III

recruitment procedure will not change, but in future, there will be a strict scrutiny of submitted codes of the applicants while completing the online coding test. There will be a separate board for designing a new salary structure keeping in mind the differences between the present economic state and salary of the employees. permanent employees can estimate the amount of profit, bonus and compensation. But, the contract-based employees will not know anything about that. This will keep company's confidential information safe.

6.2 Feasibility Study of Candidate Systems

In this section, the identification of the characteristics of three candidate systems will be mentioned. Three candidate systems will be evaluated and scored based on the performance and evaluation criterion. Finally the project cost estimation of the candidate systems will be presented.

6.2.1 Identification of the Characteristics of the Candidate Systems

Table - 6.2.1 Identifying the Characteristics of Candidate Systems

Characteristics	Candidate System I	Candidate System II	Candidate System III
1. Recruitment Process Base	Separate Panel	AI Based System	Strict Scrutiny
2. Change in Salary Structure	No Change	No Change	New Designed Structure
3. Secrecy of Confidential Information	Higher	High	Lower
4. Room of Negotiation	No	Yes	Yes
5. Cost	\$10,000	\$6,500	\$8,000

6.2.2 Candidate Qualitative Evaluation Matrix

Table - 6.2.2 Qualitative Evaluation of Candidate Systems

Evaluation Criteria	Candidate System I	Candidate System II	Candidate System III
Performance	Very Good	Very Good	Good
Growth Potential	Excellent	Very Good	Good
System Evaluation	Good	Excellent	Very Good
Employee-friendly	Good	Excellent	Very Good
Reliability	Good	Excellent	Very Good
Costs	Very Good	Good	Excellent
System Development	Good	Excellent	Very Good
Employee Training	Good	Very Good	Good
System Operation	Good	Excellent	Very Good
Payback	Good	Excellent	Very Good

6.2.3 Candidate System Performance/ Cost Evaluation Matrix

Table - 6.2.3 Performance/Cost Evaluation of Candidate Systems

Evaluation Criteria	Candidate System I	Candidate System II	Candidate System III
Performance: Growth Potential System Evaluation Employee-friendly Reliability	More than 50k Employees 80% Lack of Communication 80%	Upto 50k Employees 90% Transparency Established 90%	Upto 30k Employees 75% Lack of Transparency 85%
Costs: System Development Employee Training System Operation Payback	60,000 3-4 Months 40,000 7 Months	80,000 1 Month 25,000 4 Months	50,000 1-2 months 30,000 6 Months

6.2.4 Project Cost Estimate of Candidate Systems

- For Candidate System I

	Charges(per day)	Total
Study Phase(4 days) Analyst	\$400	\$1600
Design Phase(6 days) Analyst Board Member	400 250	2400 1500 \$3900
Development Phase(9 days) Board Member System Designer	250 200	2250 1800 \$4050
		\$9500

- For Candidate System II

	Charges(per day)	Total
Study Phase(4 days) Analyst	\$300	\$1200
Design Phase(6 days) Analyst Board Member	300 150	1800 900 \$2700
Development Phase(9 days) Board Member System Designer	150 100	1350 900 \$2250
		\$6150

- For Candidate System - III

	Charges(per day)	Total
Study Phase(4 days) Analyst	\$350	\$1400
Design Phase(6 days) Analyst Board Member	350 200	2100 1200 \$3300
Development Phase(9 days) Board Member System Designer	200 150	1800 1350 \$1350
		\$7850

6.2.5 Weighted Candidate Evaluation Matrix

Table - 6.2.5 Weighted Evaluation of Candidate Systems

Evaluation Criteria	Waiting Factor	Candidate System I		Candidate System II		Candidate System III	
		Rating	Score	Rating	Score	Rating	Score
Performance	4	4	16	4	16	3	12
Growth Potential	5	5	25	4	20	3	15
System Evaluation	5	3	15	5	25	4	20
Employee-friendly	5	3	15	5	25	4	20
Reliability							
Cost	3	4	12	3	9	5	15
System Development	5	3	15	5	25	4	20
Employee Training	4	3	12	4	16	3	12
System Operation	5	3	15	5	25	4	20
Payback							
			125		161		134

6.3 Conclusion

In this chapter the main goal is to bring out a better and alternative approach towards the Trainee Recruitment system with the current system using the Cost Estimation model. It highlights the reformation towards the recruitment panel with the data and found positive feedback on it.

Chapter 7

Cost/Benefit Analysis

7.1 Classification of Costs and Benefits of Candidate Systems

There are three classifications-

1. Tangible or intangible costs and benefits
2. Direct or indirect costs and benefits
3. Fixed and variable costs and benefits.

1. Tangible or Intangible

Tangible costs and benefits are those that can be easily identified and measured.

Ex for tangible costs are Purchase of hardware and software, personnel training, employee salaries. ex for tangible benefits are completing jobs in fewer hours, producing reports with no errors.

Intangible costs and benefits are those that cannot be easily identifiable and measured accurately. Ex for intangible costs are employee morale problems caused by the new system, lowered company image. Ex for intangible benefits are more satisfied customers.

2. Direct or indirect

Direct costs and benefits are those functions that are directly applied to the operation Ex for direct costs is purchase of a box of diskettes. A new system that can handle 25 percent more transactions per day is a direct benefit.

Indirect costs and benefits are those whose results of the operations that are not directly associated with a given system or activity. Indirect costs are referred to as overhead. Ex-indirect costs are insurance, maintenance, and protection of computer center, air conditioning. Indirect benefits are defined as a by-product of another activity or system.

3. Fixed or variable

Fixed costs and benefits are constant, they do not change. Fixed costs are insurance. ex for fixed benefits is a decrease in the number of personnel by 20 percent resulting from the use of a new computer.

Variable costs and benefits are changeable. They are not constant.

7.2 Break-Even Analysis of the Candidate Systems

7.3 Mission

- For Candidate System I

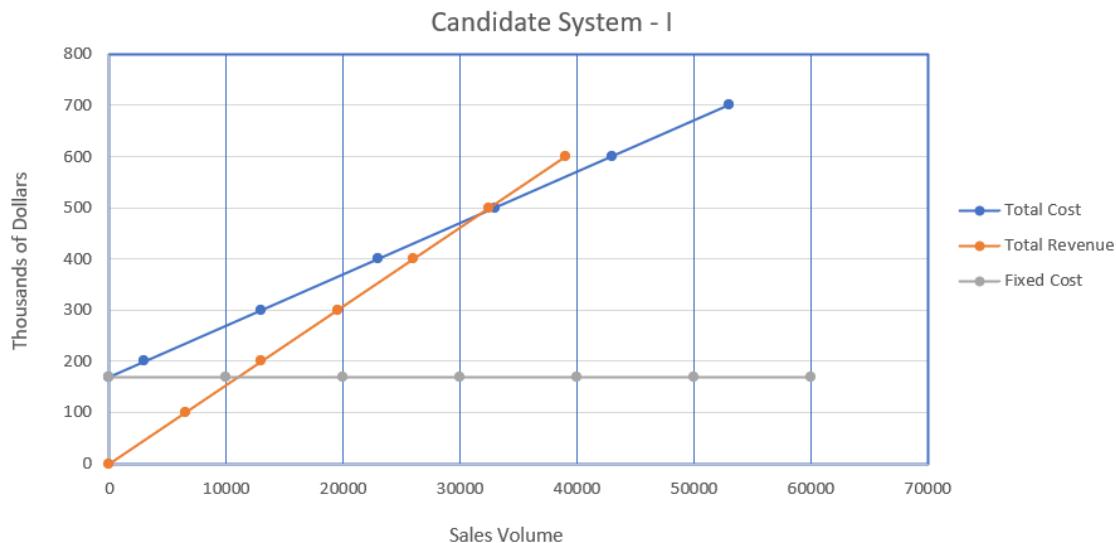


Figure 7.1: Break Even Analysis for Candidate System-I

- For Candidate System II

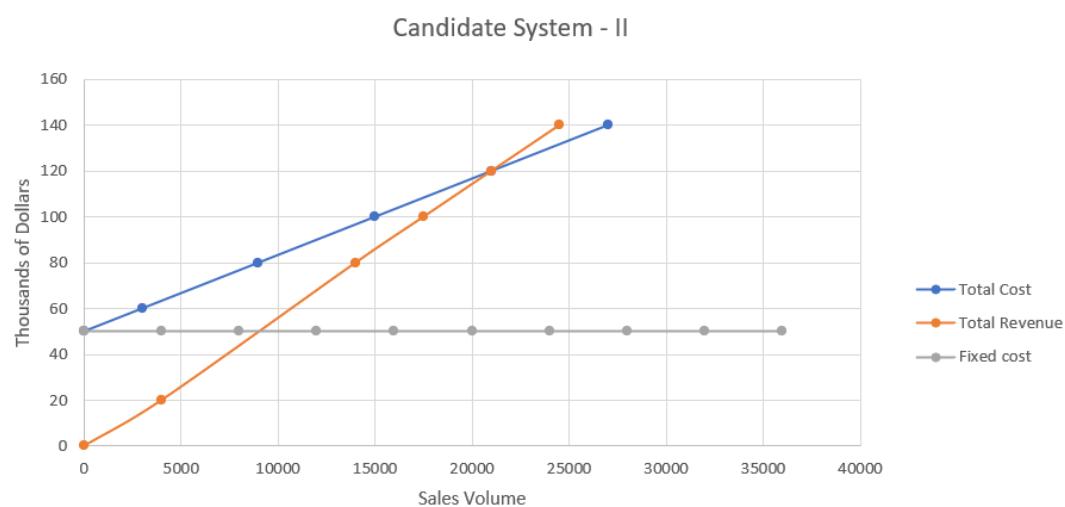


Figure 7.2: Break Even Analysis for Candidate System-II

- For Candidate System III

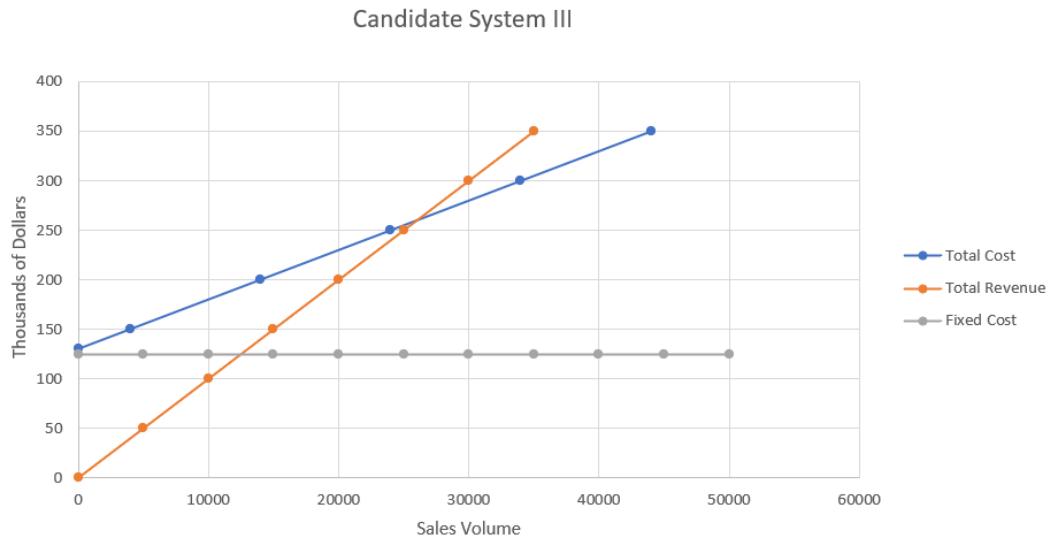


Figure 7.3: Break Even Analysis for Candidate System-III

Break-even is the point where the cost of the candidate system and that of the current one are equal. Unlike the payback method that compares costs and benefits of the candidate system, break-even compares the cost of the current and candidate systems. When a candidate system is developed, initial costs usually exceed those of the current system. This is an investment period. When both costs are equal, it is break-even. Beyond that point, the candidate system provided greater benefit than the old one - a return period.

Figure 7.2.1, 7.2.2 and 7.2.3 are break even charts comparing the costs of the current and candidate system. The attributes are processing cost and processing volume. Straight lines are used to show the model's relationships in terms of the variable, fixed and total cost of the two processing methods and their economic benefits. The intersection point in each graph indicates the point where the total cost of processing by the current system is equal to the total cost of using the candidate system.

Here, we can see the intersection point for Candidate System II is around 22,000 sales volume, whereas Candidate System I & III stands at 32,000 and 27,000 respectively. This corresponds with our previous evaluation and estimation of each of the candidate systems.

7.4 Conclusion

In this chapter the main purpose was to visualise and calculate the data discussed on the chapter-06 -"Feasibility Study" illustrated this data and calculated the break even point to justify the reformation of the existing system .

Chapter 8

Design of Proposed System

8.1 Introduction to the Proposed System

From the previous chapter's cost-benefit analysis, we have reached the conclusion that the candidate system-II is the most appropriate solution for the existing system.

We had three problems listed from the existing system -

- **Problem 1:** Improvement of Fresher Recruitment Procedure
- **Problem 2:** Reconstruction of Salary Structure
- **Problem 3:** Transparency About Bonus and Compensation

Our proposed solution system will have the following characteristics -

- **Solution of Problem 1 by Proposed System** A unique AI-based system will be introduced dedicated to only the recruitment process. In this way, there will be no bias or human-operated errors in the recruitment process. Moreover, the risk of leaking questions will not arise. The goodwill of the company will be increased.

An AI based system will automatically detect someone who is trying to cheat or follow unethical ways to pass the recruitment process. Especially in coding tests, where serious accusation has been found for copying another code, this AI based system will always keep an eye on all participants and inform the concerned authorities as soon as possible whenever it detects any illegal activities done by the participants. With increasing the accuracy of this AI based system , it will have more efficiency in finding any faults in the recruitment process and thus results in giving a fair selection process for the company. Moreover, there may be introduced a recruitment process committee who would generate any sort of idea of making new intellectual questions for recruitment. So an AI-based system with a sustainable question making committee can figure out good employees for the company.

- **Solution of Problem 2 by Proposed System** The salary structure will not completely change, but there will be room for negotiation and discussion among the employees and employers on that.

Since every company has a policy and so as the one we are writing about , the salary structure is not expected to be that disclosed but still there should be a minimum space 65 between the company staff and the workers for more clarification about how the salary structure is formed and how it is actually distributed. At least there should be a less possible distance between how the higher authorities financially run the company in background and how much the workers actually have an idea on the way the company is run.

- **Solution of Problem 3 by Proposed System** This solution will introduce a panel to negotiate with the employees regarding the bonus and compensation. In this way, there will be no loopholes in the communication.

As bonus and compensation are one of the things that motivate workers to stay more and work with more focus and productivity , these things should be discussed and informed to the employee often to inspire them. Even when someone provides the company with his best effort and result , they should give him a reward so that he can do a lot better in future and others can also get inspired from him to work more and produce better results.

8.2 Data Flow Diagram for Proposed System

In the data flow diagram sketched in the following, represents the entire system solving the three problems aforementioned above. Some points to be noted here -

- The source is the client and the destination is the customer.
- There are 12 processes, among them 4,5,11 and 12th processes solve the problems.
- There are 3 data stores for preserving current and updated data.

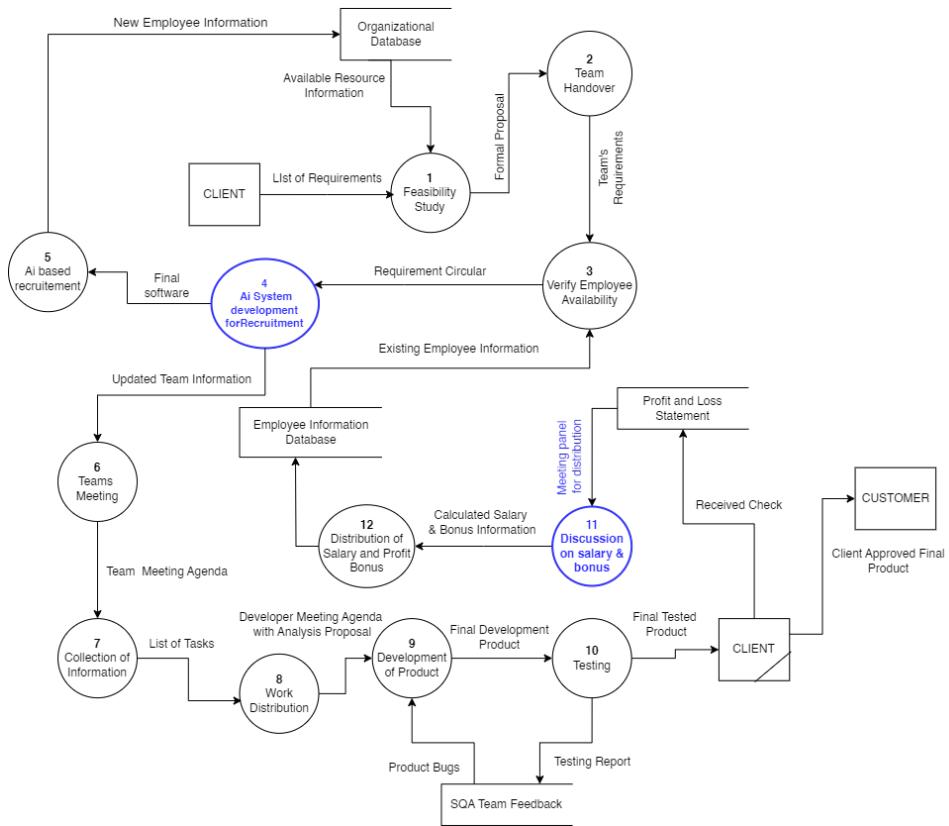


Figure 8.1: Data Flow Diagram of the Proposed System

8.3 Forms Design for Proposed System

8.3.1 Input Forms



New Employee Details

Please fill out your information below

Personal Information

Name

<input type="text"/>	<input type="text"/>
----------------------	----------------------

First Name

Last Name

Address

<input type="text"/>

Street Address

<input type="text"/>

Street Address Line 2

<input type="text"/>	<input type="text"/>
----------------------	----------------------

City

State

<input type="text"/>

Postal Code

Phone Number

<input type="text"/>

Email

<input type="text"/>

example@gmail.com

Emergency Contact Name

Emergency Contact Phone Number

Position Information

Position Title

Report To

Employee Type

Usual Days of Employment

- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Casual as Required

Bank Details

Institution Name

Account Name

BSB

Account Number

Tax & Super

Tax File Number

Super Fund Name

Super Fund Account Number

8.3.2 Output Forms



Employee Satisfaction Survey

Name

--	--

First Name

Last Name

Date

--	--	--

Month

Day



Year

How would you describe your overall level of job satisfaction?

- Very Satisfied
- Somewhat Satisfied
- Neutral
- Somewhat Dissatisfied
- Very Dissatisfied

How would you rate the following?

	Very Poor	Poor	Average	Good	Excellent
Salary	<input type="radio"/>				
Overall benefits	<input type="radio"/>				
Health benefits	<input type="radio"/>				
Physical work environment	<input type="radio"/>				
Senior leadership	<input type="radio"/>				
Individual management	<input type="radio"/>				

Do you feel valued at work?

- Yes
 No

If No, Please Explain

Do you have the resources you need to perform your job well?

- Yes
 No

If No, Please Explain

Are sufficient efforts being made to solicit colleague opinions and feedback?

- Yes
 No

If Yes, Please Explain

Please provide any additional feedback

8.3.3 Memory Forms



Submitted BY

Your Email Address

PROJECTYPE

Type *

- Enhancement to Existing Site
- Banner
- Video
- New Website
- Duplicate Existing Asset

SECTION I:PROJECT SNAPSHOT

Project Name *

Project Description *

Deadline: *

<input type="text"/>	<input type="text"/>	<input type="text"/>	
Month	Day	Year	

Live Date: *

<input type="text"/>	<input type="text"/>	<input type="text"/>	
Month	Day	Year	

SECTION II: MARKETING INSIGHTS

Primary Objective:

What is the goal of the ad or campaign?

Target Audience

Who are we talking to?

Success Measurements:

Goals must be measurable

SECTION III: COPY CONSIDERATIONS

Exact Copy to Include:

(approved by copywriter and client)

Other Mandatory copy Requirements:

(copyright info, contact info)

Translations Needed:

- Chinese
- German
- Japanese
- French
- Italian
- Spanish

SECTION IV: BUDGET

Work List Item #:

Dory Design Budget:

Production Budget:

8.4 Database Design for Proposed System

8.4.1 Entity-Relationship Model of Department Relationships

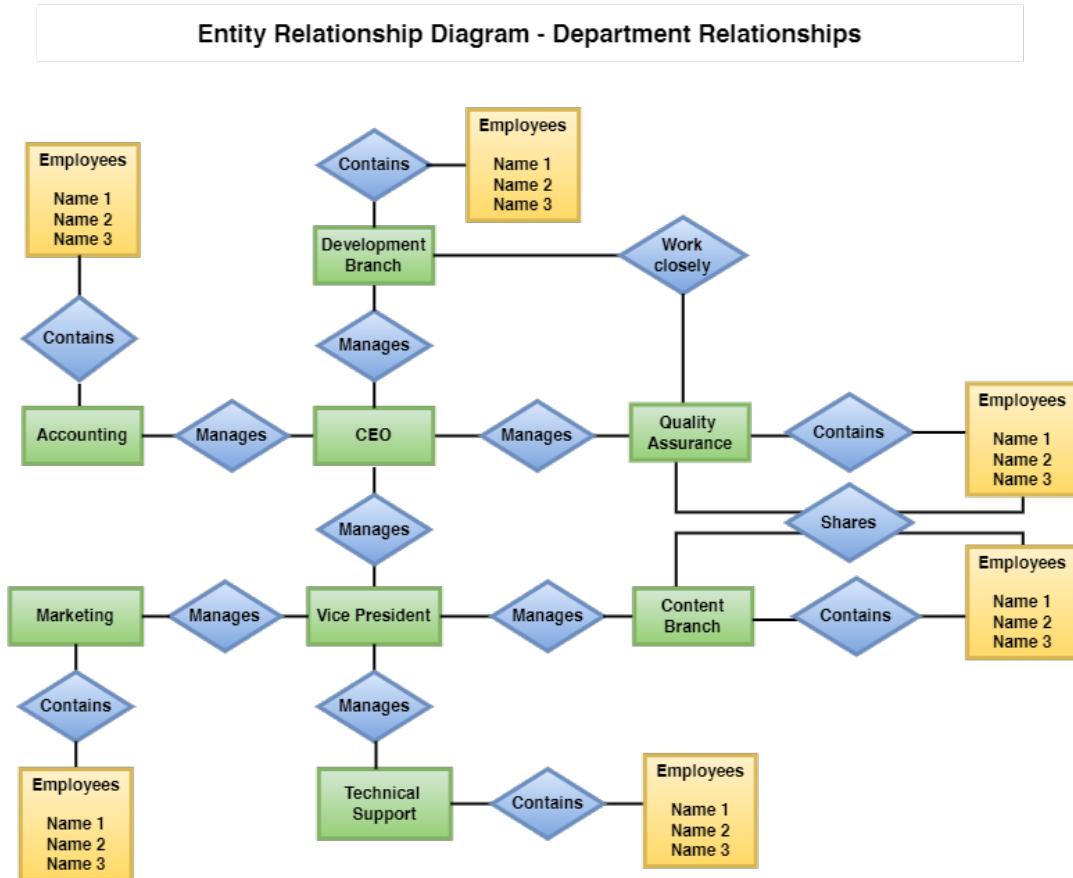


Figure 8.2: ER Diagram for Department Relationships

This ER (entity relationship) diagram represents the model of department relationships system entity. This model depicts the intercommunication between different segments of the organization, as well as the established workflow. There exists a clear hierarchy between management and employees. The tables also represent the components of this workflow.

8.4.2 Entity-Relationship Model of HR-Schema

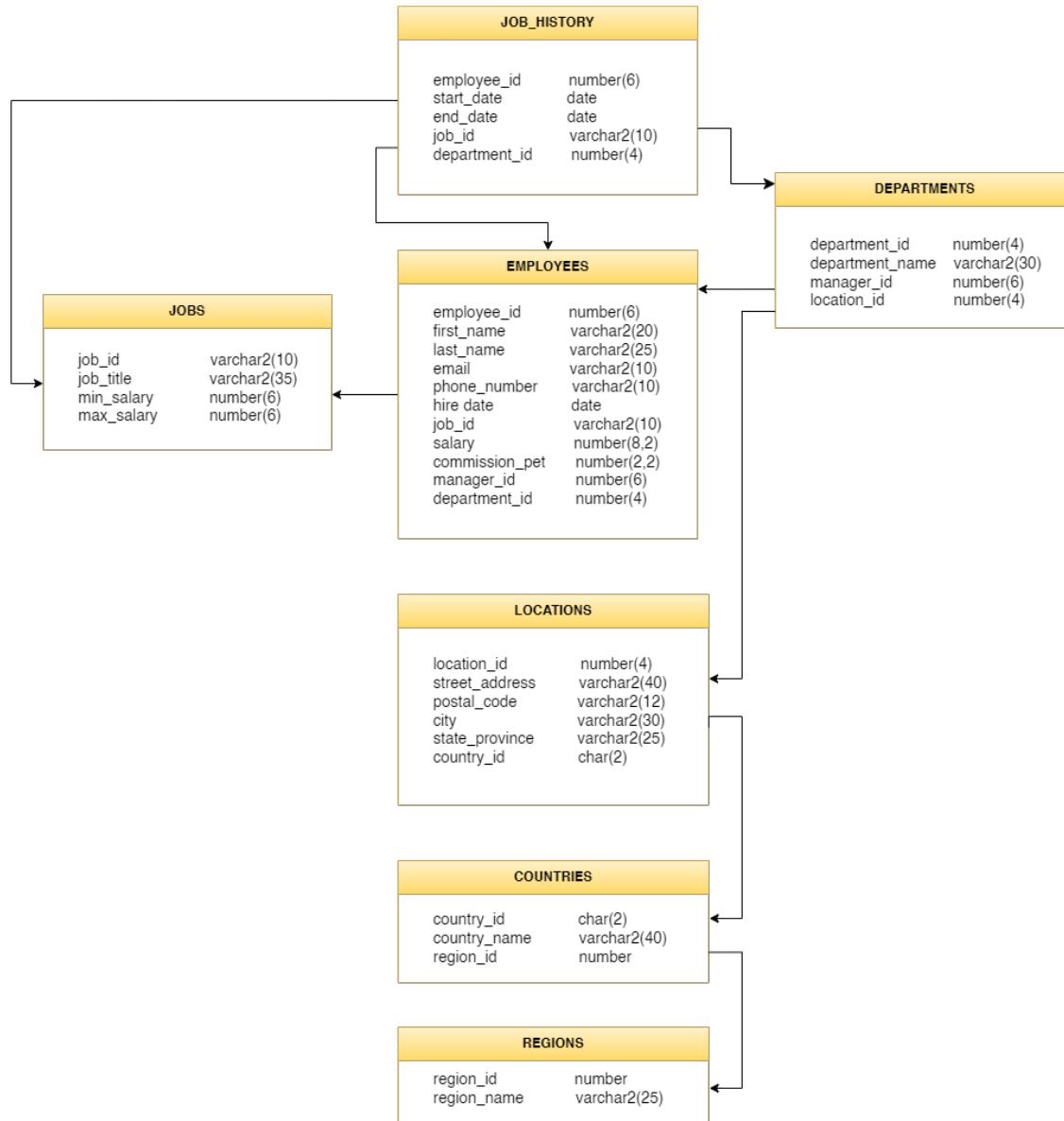


Figure 8.3: ER Diagram for HR Schema

This ER (entity relationship) diagram represents the model of human resource management system entity. The entity relationship diagram of the human resource management system shows all the visual instruments of database tables and the relations between training, department, employee, salary, slip etc. It used structured data to define the relationships between structured data groups of human resource management system functionalities. The main entities of the human resource management system are employee, training, Appraisals, departments, salary and salary slip.

8.4.3 Entity-Relationship Model of System

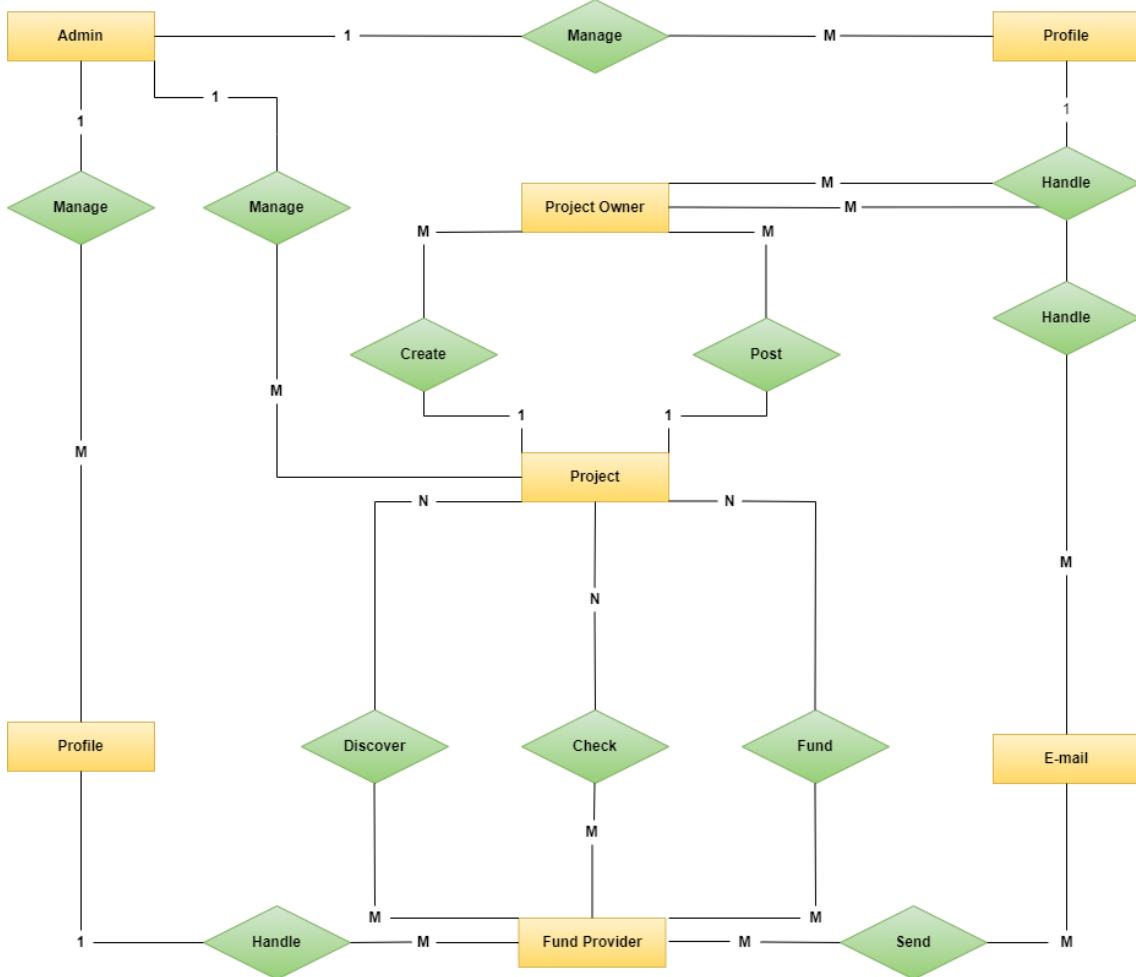


Figure 8.4: ER Diagram for the system

This ER (Entity Relationship) diagram represents the model of the project management system of the entity. The entity relationship diagram of the project management system shows all the visual instruments of database tables and the relations between employees, tasks, projects, tickets etc. It used structured data to define the relationships between structured data groups of project management system functionalities. The main entities of the project management system are project, employee, employee salary, task, bug and ticket.

8.5 Conclusion

In this chapter, the existing system reformation is highlighted and explained through of our analysis. This chapter contains the solutions of each problem specified in chapter-02—"Recognition of Need". These solutions are visualized through newly designed forms, ER- diagrams and DFD.

Bibliography