Faculty of Computing and Information Technology

BAIT1043

System Analysis and Design

Practical Assignment Report

Procurement System

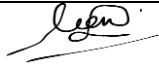2023/2024 Semester

Tutor: Mr. Yong Zi Hao

Programme: Bachelor of Software Engineering (Honours)

Tutorial Group: RSWY1S2G2

No.	Student Names	Student IDs	Contribution (%)	Signature	Marks
1.	LIM XUAN YOU	2302831	20%		
2.	CHONG WEI JIA	2301305	20%		
3.	LIEW WENG ZHEN	2303424	20%		
4.	LIM FANG CHERN	2308058	20%		
5.	THAM QI LUN	2302219	20%		
Total:	100%				

Date of submission: 2 JANUARY 2024

Date received by tutor:

Practical Assignment Report Assessment

Date received by tutor:

Criteria	Excellent	Rating	Poor	Score
Complete, correct, updated'	All the points written are complete, correct and updated by the whole team.	0 - 5	Note all the points written are complete, correct and updated by the whole team.	
Profession al format	Report is written in compliance with professional format	0 - 5	Report is not written in compliance with professional format	
Total				

Comment by tutor (if any):

_____

_____

_____

_____

_____

_____

_____

_____

Practical Assignment Report Assessment

Table of Contents

Practical Assignment Report Assessment

List of Table

List of Figure

1.0 Introduction

1.1 Selection of Organisation

Table 1. 1 Brief Description on the Samsung's Organisation Background

Organisation Background	
Real Existing Organisation Name:	**Samsung Electronics Co. Ltd.**
Founder:	**Lee Byung-Chul**
Date Founded:	**12 January 1969**
Business Divisions:	➔ **Consumer Electronics** ➔ **Information Technology & Mobile Communications** ➔ **Device Solutions**
Products	➔ **Smartphones, Tablets, Watches, Mobile Audio, TV & Home Theatre, Computing, Monitors, Memory & Storage, Home Appliances, Smart Home, Semiconductor and etc**

1.2 Revenue History of the Selected Organisation

The revenue is the total amount of income by the sales of goods and services that no expenses are deducted. In 2023, according to www.companiesmarketcap.com and based on Samsung's latest financial report of the company's current revenue is $200.26B (Samsung (005930.KS) - Revenue, n.d.). Which is showing a downward trend from year 2021 with a difference of around $40.45B.

Practical Assignment Report Assessment

Revenue history for Samsung from 2007 to 2023
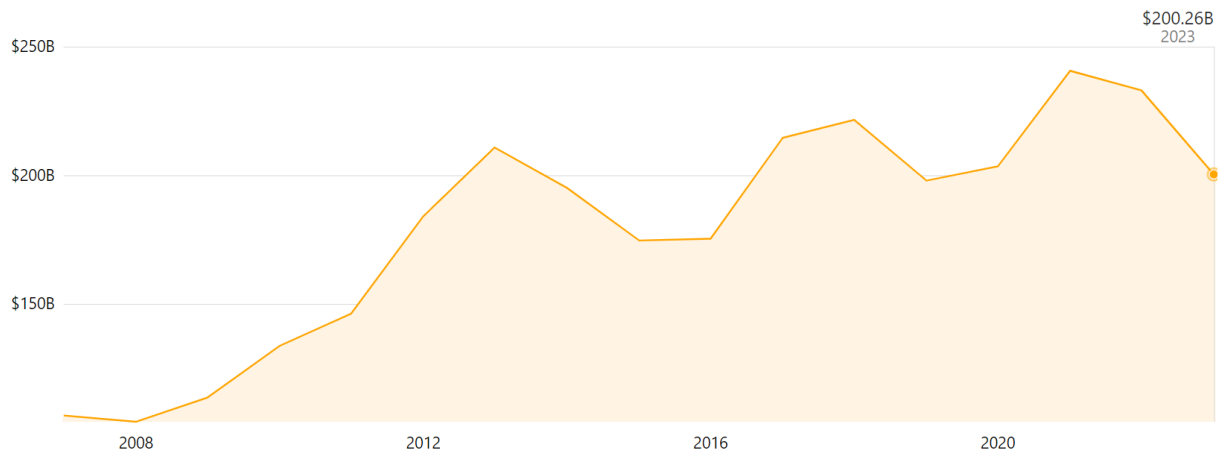
Figure 1. 1 Revenue History of Samsung from 2007 to 2023

Source: https://companiesmarketcap.com/samsung/revenue/

Annual revenue

Year	Revenue	Change
2023 (TTM)	$200.26 B	-14.1%
2022	$233.13 B	-3.15%
2021	$240.71 B	18.33%
2020	$203.43 B	2.73%
2019	$198.03 B	-10.67%
2018	$221.67 B	3.31%
2017	$214.57 B	22.25%
2016	$175.51 B	0.49%
2015	$174.66 B	-10.53%
2014	$195.22 B	-7.42%
2013	$210.86 B	14.46%
2012	$184.22 B	25.8%

Figure 1. 2 Samsung's Financial Report from 2012 to 2023

Source: https://companiesmarketcap.com/samsung/revenue/

According to Figure 1.3 Samsung Electronics share of revenue by region from 2011 to 2022 by www.statista.com, the region with highest share of revenue is from North and South America, which maintain from the range of 29% - 39%, and it reaching the highest share of revenue during last year 2022 for the last 12 years with a 39% of share of revenue amongst Europe, China, Korea, and Asia/Africa (Samsung revenue split by region worldwide 2022 | Statista, 2023). According to the bar chart, we can see that for the last 5 years, the share of revenue in the North

and South America region and also the share of revenue in Korea is getting higher, while the share of revenue in the Europe, China, and Asia/Africa region is getting lower.
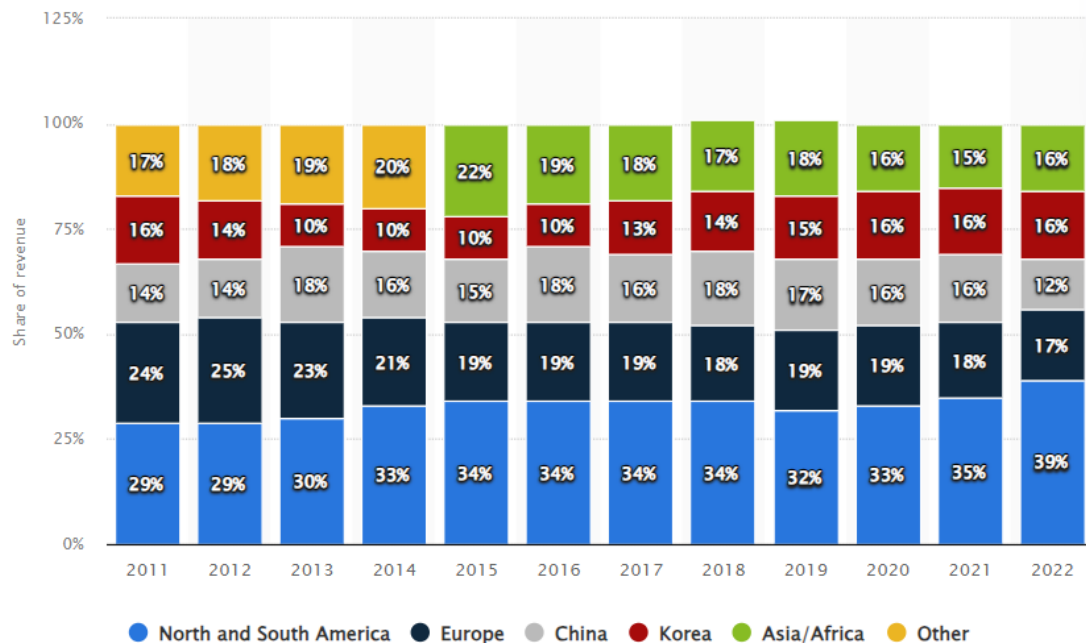
Figure 1. 3 Samsung Electronics Share of Revenue from 2011 to 2022

Source: https://www.statista.com/statistics/237092/share-of-revenue-at-samsung-electronics-by-region/

Figure 1.4 is from, www.statista.com and it shows smartphone unit shipment of Samsung worldwide by quarter from 1st quarter 2010 to 3rd quarter 2023, the value is in million (Samsung smartphone sales worldwide 2010-2023 | Statista, 2023). According to the bar chart, the highest number of smartphone sales is at 1st quarter 2014. From 1st quarter 2010 to 1st quarter 2014, the bar chart shows us an upward trend in the number of smartphone sales. At 3rd quarter 2020, the number of smartphone sales rose sharply from the previous quarter due to the launch of new flagship models such as "Galaxy Note20" and "Galaxy Z Fold2" as well as stronger sales of mass-market models in key regions.
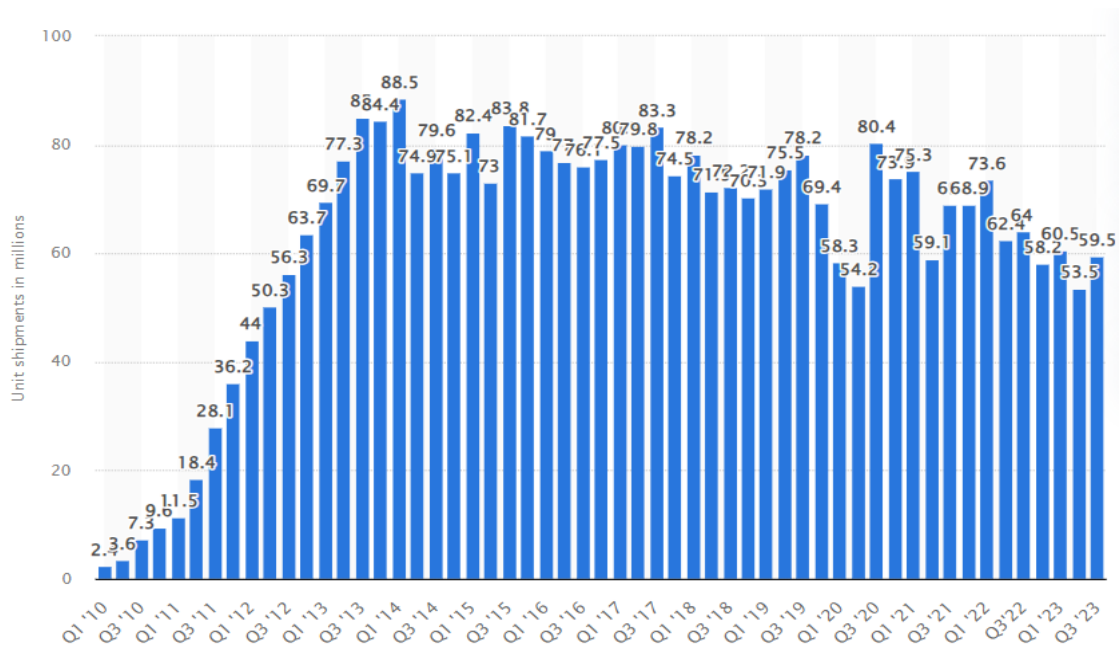
Figure 1. 4 Smartphone Unit Shipment of Samsung Worldwide from Q1 2010 to Q3 2023

Source: https://www.statista.com/statistics/299144/samsung-smartphone-shipments-worldwide/

1.3 Business and Market Coverage of Samsung Group

Samsung Group (Samsung) is a massive multinational manufacturing conglomerate based in Samsung Digital City, Suwon, South Korea. It was founded by Lee Byung-chul in 1938. While many of us might be only familiar with the electronics industry from the Samsung Group, there are actually a variety of industries that are operated under the Samsung Group. The business coverage of Samsung Group includes electronics, semiconductors, display technology, home entertainment, telecommunications and so on and so forth. This tells us why Samsung Group was ranked in sixth place among the world's top 500 most valuable companies. (Neufeld D.,2023). Not to mention that Samsung Group was the highest-ranking corporation outside of America on the list. Thus, it is an axiomatic fact that Samsung Group is standing out of the crowd not only in South Korea but also in global markets. To elucidate, Samsung Group acts as the main contributor to South Korea's economic development, politics, media, and culture and plays a pivotal role in the Miracle on Han River, which is the period of rapid economic growth in South Korea, following the Korean War.

Practical Assignment Report Assessment

Rank	Brand	Brand Value (B)	Country	Sector
1	Amazon	$299.3	U.S.	Retail
2	Apple	$297.5	U.S.	Tech
3	Google	$281.4	U.S.	Media
4	Microsoft	$191.6	U.S.	Tech
5	Walmart	$113.8	U.S.	Retail
6	Samsung Group	$99.7	South Korea	Tech
7	ICBC	$69.5	China	Banking
8	Verizon	$67.4	U.S.	Telecoms
9	Tesla	$66.2	U.S.	Automobiles
10	TikTok/Douyin	$65.7	China	Media

Figure 1. 5 A List of Top 10 from the World's Top 500 Most Valuable Companies

Source: https://www.counterpointresearch.com/insights/global-smartphone-share/

Firstly, Samsung Electronics, which is one of the flagship companies of the Samsung Group is the topic that is going to be discussed. The products manufactured include mobile phones, air conditioners, semiconductors, display devices, computers and so forth.
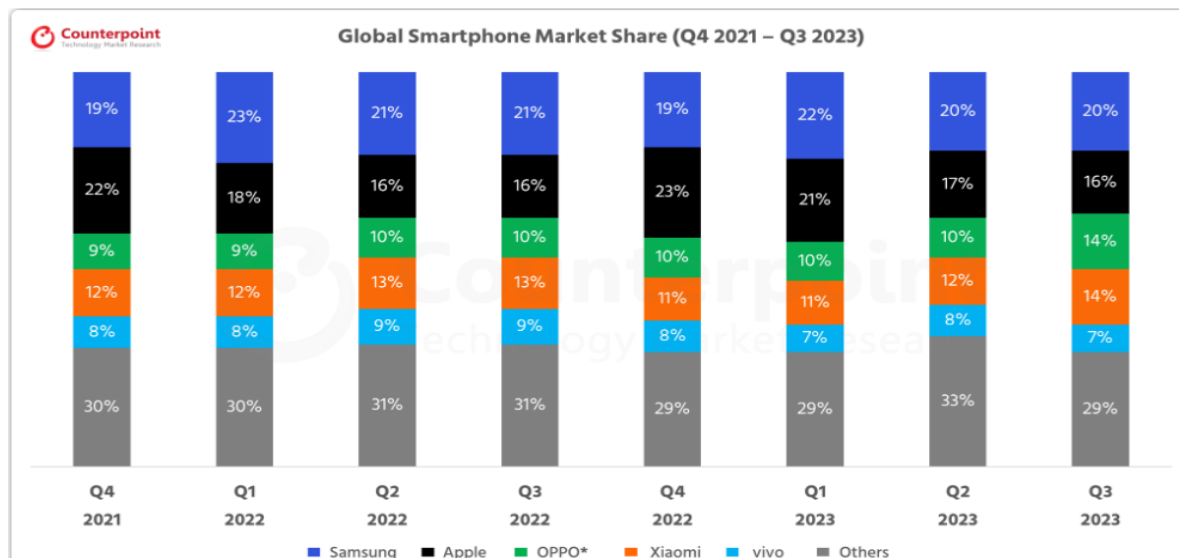
Figure 1. 6 Global Smartphone Market Share from Q4 2021 to Q3 2023

Source: https://www.counterpointresearch.com/insights/global-smartphone-share/

Figure 1.6 shows the global smartphone market share from the fourth quarter of 2021 to the third quarter of 2023. From the data collected, nearly 20% of them are in favour of Samsung brand smartphones. (Counterpoint, 2023). There has been an ongoing debate among iOS and Android smartphone users about which operating system is more effective for the smartphone. Based on the figure above, it is clear that both Apple and Samsung have their own user base and each contributes nearly one-fifth of the global smartphone market share. Besides, the figure also

illustrates that there is healthy competition among various brands as none of them holds a monopoly over the smartphone sales market.

Figure 1. 7 Top 5 PC Monitor Market Leaders

Source: https://www.mordorintelligence.com/industry-reports/computer-monitor-market

The provided figure displays the top market leaders in the global PC monitor industry. The PC monitor manufactured by Samsung Group occupied fourth place in the rank listing as shown in the figure. (Mordor Intelligence, 2023). The PC monitor market is considerably competitive as there's a myriad of PC monitors from different brandings for the end user to select, for instance Dell, BenQ, Lenovo, MSI, Samsung, and etc. Nowadays, PC monitors are made to meet the various needs of the end users. For instance, for those casual or professional e-sport gamers, they prefer to have a monitor with low latency, less response time, greater refreshing Hertz(Hz) to boost their gaming experience while for those graphic designers , UI or UX designers would like to have a monitor with good colour accuracy and coverage. Hence, this explains why the PC monitor market is not dominated by any monitor brand as shown in the figure above. In order to reach new heights in the PC monitor market leaders list, Samsung Group has announced the release of Odyssey Neo G9, the world's first single monitor with dual ultra-high definition resolution.

Lastly, Samsung Group is also globally acclaimed for its semiconductor chips, renowned for their potency in bolstering the functionality and performance of electronic devices.

Rank	Name		Market Cap	Price	Today	Price (30 days)	Country
☆ 1	NVIDIA	NVDA	$1.150 T	$465.93	▼ 0.38%		🇺🇸 USA
☆ 2	TSMC	TSM	$506.71 B	$97.70	▲ 0.40%		🇹🇼 Taiwan
☆ 3	Broadcom	AVGO	$481.32 B	$922.89	▼ 0.31%		🇺🇸 USA
☆ 4	Samsung	005930.KS	$366.00 B	$55.25	▼ 1.10%		S. Korea
☆ 5	ASML	ASML	$274.95 B	$688.64	▲ 0.71%		Netherlands
☆ 6	AMD	AMD	$193.18 B	$119.58	▼ 1.30%		🇺🇸 USA
☆ 7	Intel	INTC	$183.39 B	$43.50	▼ 2.68%		🇺🇸 USA
☆ 8	QUALCOMM	QCOM	$143.73 B	$129.14	▲ 0.07%		🇺🇸 USA
☆ 9	Texas Instruments	TXN	$139.27 B	$153.35	▲ 0.42%		🇺🇸 USA
☆ 10	Applied Materials	AMAT	$125.54 B	$150.08	▲ 0.20%		🇺🇸 USA

Figure 1. 8 Top 10 Largest Semiconductor Companies by Market Cap

Source: https://companiesmarketcap.com/semiconductors/largest-semiconductor-companies-by-market-cap/

Based on the list of largest semiconductor companies by market cap, Samsung Electronics secured an impressive ranking, which is the fourth largest semiconductor company in the world. (CompaniesMarketCap,2023). Samsung's semiconductors are often used in smartphone and tablet devices, especially in their own company's line of Samsung Galaxy devices. For instance, the semiconductor that serves as the processor in their Samsung Galaxy devices is called the Exynos series. The powerful processor with marvellous computing power plays a vital role in facilitating a top-notch experience while experiencing the Samsung Galaxy devices including swift mobile applications loading, smooth multitasking, and faster rendering of gameplay video. This tells us why Samsung Electronics is able to be the cream of the crop in the semiconductor industry.

Over the years, Samsung's strategic moves, such as its advancements in technology, legal battles and leadership changes have contributed to its extensive business coverage. In this era driven by technological advancements, the Samsung Group is channelling resources in its research and development initiatives. Their focus is particularly aimed at 5G technology, artificial

intelligence and quantum computing. These efforts underscore Samsung's commitment to staying at the forefront of transformative technologies, aiming to shape the future landscape of these industries and secure a better place for their standings in business coverage for every kind of industry in which they invested.

2.0 New Organisation Structure

2.1 Company Background

Figure 2. 1 Logo of Samtech Sdn. Bhd.

Table 2. 1 Listing of Details on Samtech's Company Background

Organisation Name:	**Samtech Sdn. Bhd.**
Founder:	➔ **Lim Xuan You**
Co-founders:	➔ **Chong Wei Jia** ➔ **Liew Weng Zhen** ➔ **Lim Fang Chern** ➔ **Tham Qi Lun**
Date Founded:	**26 November 2023**
Industry Type:	➔ **Manufacturing** ● Electronics ➔ **Information Technology** ● Software ● Hardware ● IT Services ➔ **Retail** ● General Retail ● E-commerce
Business Model:	➔ **Consumer Electronics** ➔ **Smart Home and Appliances** ➔ **Semiconductors** ➔ **Information Technology and Mobile Communication (IM)**
Business Partner:	➔ **Electronic retail chains**

2.2 Introduction on New Organisation

Our organisation's name is Samtech Sdn. Bhd. Lim Xuan You founded this company on 26 November 2023. At the same time, this company was co-founded by Chong Wei Jia, Liew Weng Zhen, Lim Fang Chern, and Tham Qi Lun.

The industry types of Samtech company are manufacturing, information technology, and retail. We majorly manufacture electronics products. Next, we also offer information technology which includes software, hardware, and IT services. After that, we do both general retail and e-commerce retail for creating higher chances of success sales of our products.

We do let our business partners, who are electronic retail chains, sell our electronics products. They will assist with the customers on product consultation by providing guidance on product features. Not only that, but they will also display our products by arranging it in a tidy manner. They will take charge of returns and exchanges if there are any issues of dissatisfaction with our products.

2.2.1 Mission of our Organisation

Our mission is to "Foster Innovation, Engineer Tomorrow.". We cultivate the culture of forward-thinking and continuous creativity. Our ambition to shape a better future drives this commitment to innovation by addressing the changing needs of our customers and contributing positively to society. We are not only emphasising in making new technologies today, but also working to build a future where our innovations have a meaningful impact on the world.

We specialised in manufacturing household electrical appliances such as fans, air-conditioners, washing machines, and kettles. Recently, we ventured into producing high-tech smart home devices related to the Internet of Things (IoT) to remain in step with advancement of Industry 4.0 within this technological era.

2.2.2 Vision of our Organisation

We dream of a future where innovative ideas make life better for everyone. We wish to create a series of positive changes in the way we live currently by using the best and latest technologies to manufacture quality products for our customers.

2.2.3 Goal to achieve by our Organisation

We wish to push forward innovation in our products and continue to hold the leadership position in the Malaysian market. We are also strongly concerned about the environmental issues caused by e-waste. For instance, heavy metals from e-waste including mercury, lithium, lead and barium may leak through the soil or even further into the groundwater. That is why we want to actively strive to minimise its negative impact on Mother nature by committing to eco-friendly practices. Not only that, but we also always try to go beyond what the users expected by giving them top-notch products and after-sales services.

2.3 Organisation Structure
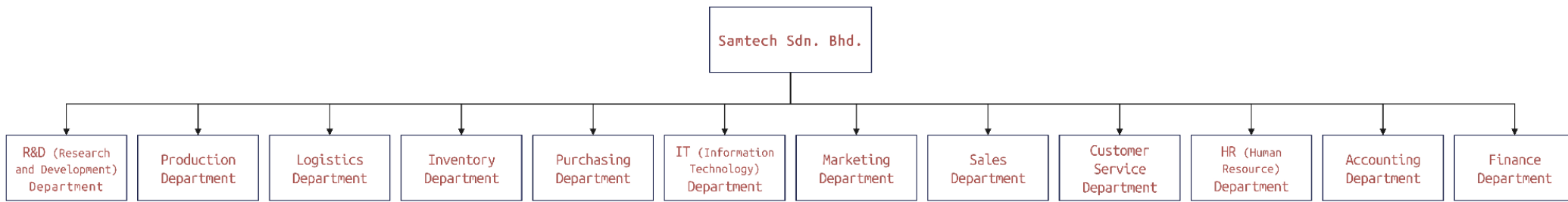
Figure 2. 2 Organisation Structure of Samtech Sdn. Bhd

Practical Assignment Report Assessment

The **organisation structure** of Samtech illustrates the departments we own and roles are interconnected and organised systematically. Based on the structure chart as shown as above, there are only 12 departments including Research and Development (R&D), Production Department, Logistics Department, Inventory Department, Purchasing Department, IT (Information Technology) Department, Marketing Department, Sales Department, Customer Service Department, HR (Human Resources) Department, Accounting Department, and Finance Department. All of these departments have their respective roles and responsibilities in the whole business process. None of these departments can be neglected, otherwise the smooth flow of the company's business processes will be disrupted negatively.

Firstly, the **Research and Development (R&D) Department** focuses on thinking about what products could be developed. They majorly explore the fresh new ideas and conduct research before developing the products. They have to give ideas and plans that fit with the company's long-term goal. They need to introduce imaginative concepts which are potential in the company's offerings. During the process of researching, they will balance the expenses on so-called "innovation projects with big dreams" by making sure their "new ideas" do not cost an arm and a leg. The most ideal one is to find out the new discoveries of products which are cost-affordable but still something that is suitable for the introduction of all-new concept products to the users.

Next, the **Production Department** will translate and convert the innovative and imaginative concepts by R&D department into tangible products on a large scale. Employees of the Production Department manage and organise all matters of the production line. And most importantly is to avoid the products not getting late to be manufactured. Next, they are in charge of manufacturing processes and product quality verification before packaging into cartons of boxes. This ensures that the final products meet industry standards and customer expectations. They will contact R&D Department sometimes for understanding more on how to make new products. They need to plan on how to improve the management of the production line by implementing the concept of lean manufacturing principles to streamline processes, improve overall operational efficiency, reduce waste and unconsciously reduce costs.

Besides that, the **Logistics Department** makes sure that all certified finished goods from the Production Department to either the distribution points or retailers' warehouses directly and

smoothly. Meanwhile, they play a crucial role in arranging shipping schedules and making sure that all goods are delivered in time. Other than that, they are responsible for cutting unnecessary costs, such as transportation and shipping fees, warehouse expenses, and overall supply chain expenditure if any.

In addition, the **Inventory Department** oversees the level of stocks and adequate storage for finished goods. They have to frequently monitor inventory to meet fluctuating demands so that shortages and overstock situations can be prevented. There will be a system developed by the IT Department which allows them to keep track of the location of the products. With the aid of an IT system, it assists in keeping records accurately by eliminating careless mistakes done by human beings. As we know, there are certain types of products that have the problem of broken-down or cannot run smoothly in case some products are put aside for a long time. For example, Sometimes, they are the one who will be contacted by other departments especially the Marketing Department in case they wish to know how much stock is still available currently in the warehouse before organising any promotion campaigns for sales-growth purposes.

Moreover, the **Purchasing Department** is the one who is required to procure the right raw materials and parts needed for the production process. Simultaneously, they need to make the best decision on balancing both cost and quality of it. Contacting the suppliers and negotiating about the contracts, especially the price, the payment time, and the time received of the raw materials are their jobs too. They help the company to procure the highest quality raw materials using lowest costs. Normally, they will need to be alert, aware and keep an eye on the latest market price of raw materials currently whether it is going up or down. For example, the price of raw materials will rise up when there is significant increase in demand especially during COVID-19 pandemic. On the flip side, the price of raw materials can drop down too during a global economic recession. Slow growth can lead to decreased demand for raw materials and contribute to lower prices.

Furthermore, the **Information Technology (IT) Department** focuses on troubleshooting all kinds of technology-related issues. For example, they will make sure that all computers, software, hardware, networks and others can be operated normally. As a result, all the computers and software will be constantly checked and upgraded by them. They also will manage routers, switches, firewalls, and other networking components to ensure efficient data flow within the

organisation. Data security of the company will be regularly monitored. They will back up important data as safeguard against data loss. Keep an eye on the latest sophisticated technology which is able to be fitted into the company's system to enhance efficiency and competitiveness.

Next, the **Marketing Department** will focus on making people aware of our products and services in a smart way. They need to understand the market by studying what people love and what are the ways of competitors related to marketing on generating sales. They will try to create awareness amongst the public by offering attractive marketing plans, implementing advertising strategies to the right target audience. They will organise cool and catchy campaigns to make our products look special and different. They are also responsible for using as much as possible online business-to-consumer (B2C) platforms which are popular amongst Malaysians such as Shopee, and Lazada for marketing purposes. There will be certain graphic designers who prepare the attractive posters before posting at these B2C platforms. Marketing employees are in charge of convincing and persuading customers why are they should buy our products.

Then, the **Sales Department** is the one who directly faces and interacts with the customers. They need to study all detailed product or service information before explaining to customers when selling in a way they can understand better. They must know the features, benefits, and how it can be useful extremely clearly. Making sales is not only their job, they need to have a relationship with customers, building trust and understanding the needs of customers too. When a customer is bargaining with the price, they will need to take out their negotiating ability skillfully in order to talk about terms, conditions, and the best prices between customers and us.

After that, the **Customer Service Department** in charge of the post-sales phase majorly. They offer after-sale support, guidance, and assistance to customers. They are all about answering questions, troubleshooting problems, and making sure buyers' experience is awesome and satisfactory overall. As customers will approach this department whenever they encounter any problem of products or services they purchased, hence they are forced to be self-equipped with all kinds of technical support related knowledge and professional technical skills. They are trained to be patient when offering guidance on how to use, set up, and take care of our products. They are the one who handles returns and exchanges from the customers too. Meanwhile, they will explain our policies, company rules such as, warranties, returns, and other important info.

Other than that, the **Human Resource Department** acts as the care-taker for all the things related to employees. They will create and post job advertisements to hire new employees. After that, the shortlisted candidates who fulfil our requirements will be invited for interview sessions by our professional HR managers. The successful candidates will be arranged for training sessions in order to grow and brush up their skills according to what kind of job position they are applying for. Handling conflicts between employees and maintaining a positive and friendly workspace is the job scope of the Human Resource Department too. Most importantly, they will take good care of employees' salary pay by reviewing salaries so that everyone is gaining the benefits they deserve. Once the skilful, experienced and eligible key employee has been figured out, they will promote them to hold higher leadership positions within the company.

Subsequently, the **Accounting Department** acts as the money guidance for the company and will need to keep track of money transactions, budgets, and reports in order to maintain accuracy, transparency, and compliance of the financial by recording, classifying, and summarising money transactions. This includes accounts payable, accounts receivable, payroll processing, and other monetary activities. They will work with different departments to create and manage budgets. Not only that, but they also keep track of the actual spending compared to what was budgeted and provide assistance with financial decisions. Professional accountants will make financial reports by creating balance sheets, income statements, and cash flow statements. They ensure compliance to accounting standards, regulations, and legal requirements. They also take charge of taxation, from filing returns to following tax laws and squeezing their brains to discover effective ways to use smart tax strategies legally. Our financial analyst specialists will interpret the latest trends from financial data, find opportunities with lower risk, and provide consulting services on efficient ways of getting improvement. They will monitor and control the money to make sure it is always enough to cover all the expenses in the company. For a real-life example, the company will cut costs on salary payment by sacking unnecessary workers who are less competitive in our workspace. Thus, budget analyst specialists are also the one who need to think on how the company is going to save money, minimise the budget by analysing cost structures. On top of that, they are responsible for paying employees every month accurately in compliance with the labour law.

Last but not least, the **Finance Department** is the money captain of the company unlike the job scope of the Accounting Department. They make sure that the financial matters are planned out and well-prepared systematically. They are the ones who make the big decisions for the company strategically, planning well for a long-term period of time, and ensuring overall financial stability of the company is sustainable. For financial strategy, financial strategies aligned with the company's objective will be developed and implemented by a financial planner specialist of the company. Similarly, investment analyst specialists in our company will look for golden opportunities which have the potential to generate benefits with maximised ROI after investing minimised funds. When investing, the risk analyst specialists will identify potential risks which are able to impact the company negatively so that we can minimise the percentage of the losses on investment. Ultimately, the stakeholders will not be worried about the financial management of our company. Our Chief Financial Officer (CFO) will be the one who announces financial reports to stakeholders, including shareholders, board members, and regulatory bodies. This is to ensure that financial health, performance, position, and cash flows are all transparent to stakeholders. Eventually, it contributes to trust-fostering and confidence-building via accountability with stakeholders. The financial report will reveal to them the major decisions done by the company.

2.4 Current System Used
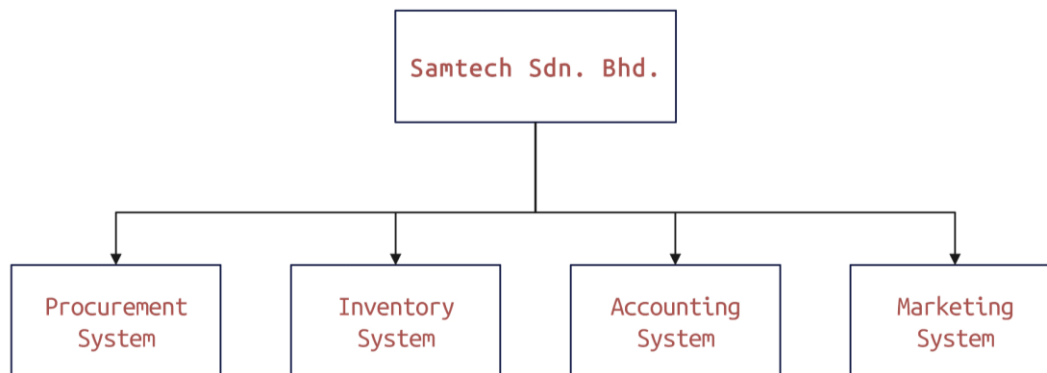
Figure 2. 3 Four systems used in Samtech Sdn. Bhd.

Samtech Sdn. Bhd. uses four types of systems called procurement system, inventory system, accounting system, and marketing system.

Firstly, we use procurement systems to enable us to save cost when we use it for negotiating better deals with suppliers as it will provide us with the market trends, performance, and pricing. It also allows us to do the bulk purchasement of the products easily. Bulk purchases will lead to a lower unit price of a product compared to small scale purchases. This contributes to potential cost savings to the company by minimising the expense when buying something.

Next, we utilise the inventory system for inventory levels' real-life monitoring. This may avoid situations like out-of-stock, and over-stock. It will prompt us the warning message whenever inventory has reached a predefined minimum value. Other than that, it helps in preventing losses due to obsolescence and theft as we may just promptly identify and address issues.

Besides that, we may easily record all the financial transactions especially sales, purchases, and expenses systematically. It generates a balance sheet based on professional accounting methods, income statements which provide us with the financial information and performance of the company clearly. Most importantly, our company will be able to create accurate tax reports with obeying tax regulations in Malaysia at the same time. This kind of automation can streamline

the processes, especially routine accounting tasks, minimising the risk of human errors and cutting downloads of accountants.

Last but not least, we use marketing systems to gather information and analyse latest market data, consumer behaviour, and industry trends so that we can make the smartest marketing strategies when selling our products and services. Simultaneously, it assists in monitoring and analysing activities of competitors in the market currently. Moreover, it will provide the feature of tracking marketing KPI such as conversion rates, click-through rates, and return on investment (ROI) achieved by our company.

2.5 Four Main Functions and Features of Procurement System

Handling the purchasing and ordering process of an organisation

First of all, there might be a specific requirement for every single item or service that is going to be purchased by the company. This may be a new item that the company has not previously purchased, a restock of existing items, or a replacement of impaired items. When a business group needs to procure a significant number of new supplies or services, they will make a formal purchase request (PR) which serves as a signal to the company that a need exists. While for the organisation with an extensive number of branches, there will be a centralised procurement which is a central team or department. Its main task is to oversee the purchasing activity of all branches. Subsequently, each branch will submit a purchase request detailing the specific items needed by that particular branch. After the branch manager or designated personnel oversees and approves the purchase request, the procurement team will proceed with selecting the vendor and handling the purchase process. When the procurement team has found the desired supplier and agreed on final terms, they will fill out the purchase order (PO) and send it to the supplier.

Assess and select the vendor carefully to optimise the benefits of the organisation

The procurement team is essential to seek for a reliable supplier that can provide competitively priced goods and services. Unlike purchasing that is merely focusing on the buying of goods and services, the procurement emphasises the process of receiving goods and services from the supplier. Procurement is an internal process used in a business environment. The procurement team plays a role in sourcing the supplier that meets the needs and requirements of their company. To elaborate, with a clear list of purchase requests, the procurement team will take their time to find the best vendor and send a request for quotation (RFQ) to receive a quote from those potential suppliers. The quote has to be as detailed as possible as the vendor assessment does not only focus on the cost, but also on quality, reputation, consistency and so on and so forth. For instance, if the company is looking for a supplier to provide an ongoing service such as transportation and logistics services, the onus is on the procurement team to analyse and choose the suppliers that are able to ship the goods needed in a timely manner and at the same time with the lowest possible cost to reduce the burden of the company. In order to increase the

company's revenue, the procurement team plays a vital role in negotiating prices and terms before making the final decision on the purchase. Thus, it is common that the team will get at least three quotes from the selected supplier and negotiate where possible so that the deal is win-win for both parties.

Inspection of delivered goods and arrangement of payment

After the goods have been delivered, the procurement team should carefully examine all items, ensuring that the items meet the expected standard and quantity and also conduct a three-way matching by comparing the purchase order, invoice and packing slip. If there's any missing or impaired items, they will have to report to the supplier and ask for compensation from the supplier. Another risky process during procurement is during the payment for the goods and services. The procurement team will take part in approving and paying the invoice. They are responsible for checking the payment details to ensure that the payment amount is exactly the same as the invoice amount and redirect to the supplier.

Contract Management

Procurement professionals are often involved in negotiating contracts with the vendors or suppliers. Effective procurement contract management is crucial as it could reduce the time spent on handling the procurement process. To elucidate, with a modern procurement management system, the contract creation can be streamlined with guided authoring such as standardised templates. The procurement team has to work closely with legal departments to ensure that the drafted contracts adequately protect the organisation's interest as every detail in the contract matters to the organisation. Once the contract is implemented, the procurement team has to ensure that both parties adhere to the terms and handle any deviation that might occur during the contract period. At the moment when the contract expires, the procurement professionals have to decide whether to renew, renegotiate, or terminate the contract based on the performance of the vendor or supplier during the contract period. They also assess and mitigate the risks associated with the contract such as financial risks, delivery delays and quality issues and therefore minimise the impact of any sudden case on the business operation. All these effective contract management is essential to foster a strong relationship between the organisation and the supplier. Thus, the procurement team is often regarded as an "architect", equipped with the

methods to construct and maintain positive relationships with the vendors, ensuring seamless communication, addressing concerns, and actively seeking opportunities for future collaboration.

3.0 System Planning: Preliminary Investigation

3.1 Describe the Sources of Request

Top Management

System requests are often carried out by the top management's strategic initiatives. Every organisation has their objectives and goals including ours. Therefore, the existing system should be examined periodically, and improvements should be made based on the management's requirements to achieve the organisation's objectives. For instance, in the procurement system in our organisation, new features could be added like automated procurement processes. This process focuses on automating the purchasing of goods and services by tracking the quantity of goods. This will improve efficiency and reduce the time and effort required for purchasing activities. Based on strategic initiatives driven by top management, this undoubtedly contributed to the growth of the organisation.

Users need

Users play an important role in the procurement system in our organisation because they are the ones who engage directly with the procurement process. Therefore, they might easily discover the problems that exist in our existing system based on their day-to-day experiences. Understanding and addressing the needs of the user is the crucial part that our organisation tends to do. It is also essential for the successful design and implementation of an effective procurement system. Thus, the user's feedback and survey should be conducted by our organisation to know their insight about what is the inefficiency or challenges they faced by using the existing system. Other than that, as our organisation expands globally, the challenges related to the procurement system will arise. Diverse languages and currencies across several countries are different, which may cause inefficiency in communication and calculation within the procurement system. Thus, the existing system should be designed in such a way that can accommodate multiple languages and currencies to make our system more efficient and flexible.

Existing system

Within the current procurement system, our organisation encounters errors and inefficiencies and these kinds of problems are quite challenging for our organisation. It may lead to operational inefficiencies, increased cost and time-consuming. These issues or inefficiencies are usually reported by users or observed by IT personnel. The other existing problem is the system becomes slow during peak usage time and this will delay the processes such as generating purchase orders, approving requisitions or updating supplier information in the entire procurement process. These delays can affect the whole production schedule, and impact inventory levels and relationships with suppliers. Thus, the existing system issues must be addressed, and the performance of the system must be improved to ensure smoothness in the procurement process. Other than the slow processing time issue, relying on the manual procurement system is still a challenge and problem. For instance, manual tracking of supplier information, contracts and performance. The relationship between organisations and suppliers relies on manual processes will bring limited supplier management eventually. Therefore, moving from a manual procurement system to an automated procurement system is one way to solve this issue.

3.2 Describe Services / Improvements Requested

Improve the Quality of Reports

The existing procurement system should be able to generate reports, but there are concerns that the information produced might be inadequate, incomplete and inaccurate. The improved system should enhance the data accuracy to ensure that the data presented is accurate, relevant and up to date with the latest procurement transaction. By increasing the accuracy of data, our organisation can develop and adjust our strategies based on reliable data. Other than that, we can integrate the procurement system with other relevant systems, such as finance, inventory management and supplier databases, to pursue real-time data updates. In this way, our reports reflect the most recent and accurate information. By obtaining this high-quality report, our organisation is able to negotiate better terms with suppliers, optimising purchasing amounts of goods and avoiding unnecessary expenditures.

Improve Functions

The existing procurement system where certain functions are limited and that affects the effectiveness of the procurement process. Therefore, we can increase the progress of purchasing order processing such as enhancing the functionality related to creating, approving and tracking purchase orders to reduce the processing time. In this way, we can increase the efficiency of the procurement process by this streamlined function. The next function that can be added is the Request for Quotes (RFQ) feature which can bring advantages to our procurement system. Our company use the procurement system to purchase goods and services from suppliers. However, the system lacks a specific feature for requesting price quotes from potential suppliers. Therefore, the RFQ feature can help our company to solve this problem, it is a formal request that will be sent to suppliers, asking them to provide price quotes for specific products and services. This helps our company gather competitive pricing information from different suppliers before making purchasing decisions. Thus, our procurement process becomes more efficient as time can be saved by this automating quotation request process and also enables an easy comparison of price quotes received from different suppliers.

4.0 System Planning - Feasibility Study

4.1 Cost Summary Table

Table 4. 1 Cost Summary Table

Cost Summary Table			
Categories	**Description**	**Total Price (RM)**	
Hardware Costs	Server (52,000 x 1 unit = RM 52,000)	52,000	
	Desktop Computers (RM 2,000 x 60 units = RM 120,000)	120,000	
	Monitor (RM 300 x 60 units = RM 18,000)	18,000	
	Mouse & Keyboard (RM 50 x 60 units = RM 3,000)	3,000	
	Router (RM 500 x 12 units = RM 6,000)	6,000	
	Switches (RM 1,000 x 6 units = RM 6,000)	6,000	
	Ethernet Cable 2,000m (RM 1,000 x 6 units = RM 6,000)	6,000	211,000
Software Costs	Operating System for desktop computers (Windows 11 Pro)	77,940	
	Operating System for server (Windows Server 2022)	5,000	82,940
Development Costs	Developer's Salary (RM 5000 x 10 persons x 12 months = RM 600,000)	600,000	600,000
Implementation Costs	Training Cost (RM 2000 x (5 factory + 1 Headquarter) = RM 12,000)	12,000	
	System Installation, Configuration and Testings Cost (RM 3,000 x (5 factory + 1 Headquarter) = RM 18,000)	18,000	30,000

Total:	923,940
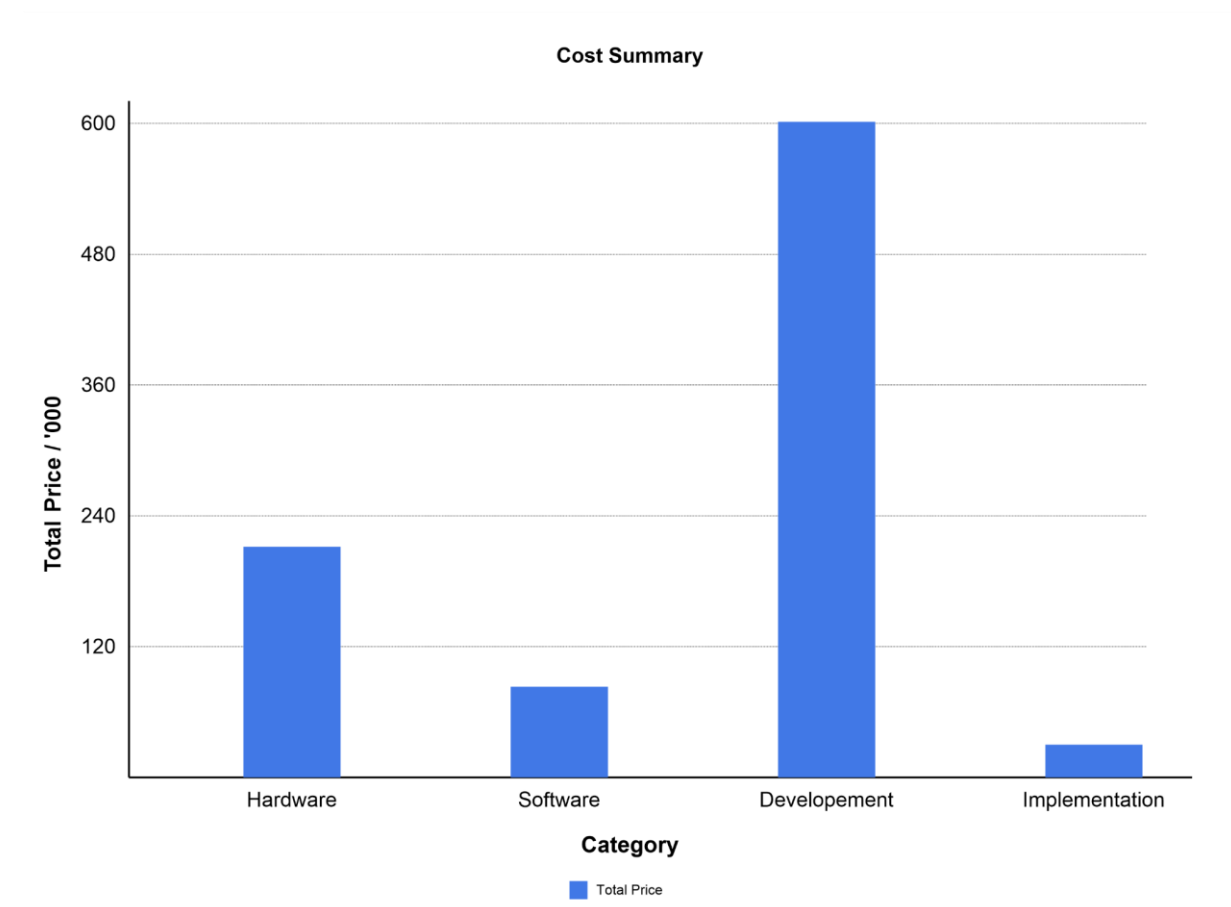
Figure 4. 1 Cost Summary Bar Chart

Table 4. 2 Costs Brief Notes

Notes	
Hardware Costs	Include all required hardware to run the new system.
Software Costs	Include all required software for the hardware to work properly.
Development Costs	Include all costs to develop the new system.
Implementation Costs	Include all costs for implementing the new system.

Practical Assignment Report Assessment

Table 4. 3 Hardware Cost Details

Hardware Costs Details					
No.	**Hardware Component**	**Model Name**	**Units**	**Unit Costs (RM)**	**Amount (RM)**
1.	Server	Dell PowerEdge R7625 Rack Server	1	52,000	52,000
2.	Desktop Computers	Dell Inspiron Small Desktop	60	2,000	120,000
3.	Monitor	24" Essential Monitor S3 S31C	60	300	18,000
4.	Mouse & Keyboard	HP Pavilion 200 Capri Combo USB Keyboard and Mouse	60	50	3,000

5.	Router	ASUS WiFi Router RT-AC1900P	12	500	6,000
6.	Switches	TP-LINK TL-SG3428 Network SFP switch	6	1,000	6,000
7.	Ethernet Cable	Ethernet Cable (2000m)	6	1,000	6,000

Notes:

The server will be installed at the headquarter and the completed set of desktop computers will be allocated to 10 units per factory, for a total of 5 factories. The 10 leftovers will be installed at the headquarters. Each building will be equipped with 2 routers, 1 switch and 1 unit of Ethernet cable to set up network infrastructure.

Table 4. 4 Software Cost Detail

Software Cost Details				
No.	**Product**	**Units**	**Unit Costs (RM)**	**Amount (RM)**
1.	Windows 11 Pro	60	1,299	77,490
2.	Windows Server 2022	1	5,000	5,000

Notes:

The server will be using Windows Server 2022 as the operating system while the other 60 desktop computers will be using Windows 11 Pro as the operating system.

4.2 Benefits Summary Table

Table 4. 5 Benefit Summary Table

Benefit Summary Table		
Description		**Benefits (RM)**
Tangible	Reduce staff costs (RM2,500 x 3 staff x 5 factory x 12 month = RM 450,000)	450,000
	Eliminate exceed stock purchased (RM 10,000 x 5 factory = RM 50,000)	50,000
	Reduce space costs (RM 10,000 x 5 factory = RM 50,000)	50,000
Intangible	More precise management information	N/A
	Reduce human error	N/A
Total Benefit:		550,000

Table 4. 6 Benefit Brief Notes

Notes	
Reduce Staff Costs	Using a procurement system can reduce staff costs because our company can reduce staff which are in charge of preparing purchasing documents manually for example: before using the system we need 5 staff to prepare documents such as: purchasing order, purchasing request document etc but now we just need 2 staff to in charge of the purchasing

	procedure because most of the document can be automated by the system.
Eliminate exceed stock purchased	A procurement system can show us our inventory level and help us to forecast when to restock so we can prevent unnecessary orders and increase our cash flow for other areas.
Reduce space costs	After preventing unnecessary orders, we can reduce space to store our extra stock and use it for other purposes.
More precise management information	Using a procurement system it can show us our real-time inventory information and generate reports for the management so it can lead us to a better decision making.
Reduce human error	Automated procurement systems can reduce many errors which are caused by manual human operation. For example: using the current system our staff need to create documentation manually but now they can just key in the required information and the system will use templates to generate a complete document.

5.0 System Analysis: Fact Gathering

5.1 Design Interview Questions

5.1.1 System Function Problem

1. **Not able to keep track of the changes on supplier capabilities**

   Orders from unreliable suppliers can have a bad impact on our company image. The current procurement system can only help us to analyse and assess the supplier on the first-time purchase from that particular supplier. After the first purchase onward, the system will prioritise on the price of the supplier as consideration rather than the other factors (such as: product quality, delivery time, consistency on supplying the product). Therefore, when the supplier behaviour changes after some time it can cause the company to order the product from an unreliable supplier and cause bad impact (such as: low quality, cannot produce product continuously) on producing the product.

   Current assess and select supplier function of the procurement system cannot keep track of the supplier capabilities. It will always choose the lowest price supplier from our existing supplier database and cannot notice that the supplier has some changes on their capabilities.

   The system does not provide the end user (e.g. staff, procurement manager) to rate the supplier function (such as: rating on stock quality, delivery time) so that the system can't base on the given information to analyse the supplier and generate a report about the supplier to let the management know the performance of the supplier.

5.1.2 Interview Questions

1. **Could you describe to us your experience with the procurement system and their functionalities, especially in supplier assessment and selection?**

   Yes, I have experience working with the procurement systems, where I have been involved in various aspects of supplier assessment and selection! In my role, I have used procurement systems to streamline the process of identifying and onboarding suppliers. The system I used offers the functionalities which help in evaluating the performance of the supplier in terms of cost, quality, delivery time needed, and overall reliability. Next, I create and manage supplier databases that have the information such as supplier name, their products and services provided, historical performance data. This assists me in the supplier selection process quite a lot.

2. **Based on your experience, what limitations have you observed in the current procurement system's ability to assess and select suppliers?**

   Based on my experience, I observed several limitations in the current procurement system's ability to assess and select suppliers. One of them is that the system focuses on the initial purchase rather than considering long-term reliability of suppliers. The system tends to prioritise suppliers based predominantly on cost factors during the first transaction, and may neglect other aspects such as product quality, delivery time, and consistency in supplying products. In addition, the procurement system lacks a mechanism for tracking changes in supplier capabilities over time. It just finds the suppliers who offered the lowest price from the existing database without actively finding the most competitive supplier. It will just choose the cheapest supplier even if the ability of the chosen supplier has changed negatively. This limitation can lead to a mismatch between supplier capabilities and needs of the company in procuring products within a certain period of time.

3. **How would you address concerns about the potential negative impact on the company's image due to orders from unreliable suppliers?**

   In my opinion, to prevent negative impact to the company's reputation due to unreliable suppliers, it is crucial to take a smart and collaborative approach. This involves managing risks before rainy days, strategic communication, and constantly improving the way we procure things. Firstly, the company should use a strong system for evaluating and

watching over suppliers. This means looking at not only the cost, but also considering how good are the qualities of products, time taken for arriving, and is it always available for sale. This helps us to spot the unreliable suppliers and gradually eliminate them from our "procurement supplier list". The company can build good relationships with key suppliers by talking to them regularly. With good communication with suppliers, we may try to understand their challenges and solve the problem together. By working closely, we may encourage positive changes in how suppliers behave, ensuring a steady supply of products.

4. **What are the consequences when the supplier's performance varies significantly from your expectations?**

When the supplier's performance deviates from our expectations, it disrupts our workflow and impacts our overall operations. For instance, if a supplier performed exceptionally during the early stage but later failed to maintain those standards, it would result in delayed production schedules. In this case, we have to look for alternative sources to obtain those goods or services that are essential to fulfil the end user's needs. Thus, the repercussion from this incident does not only give rise to additional costs but also potentially jeopardise our relationship with our clients.

5. **In the procurement process, keeping track of the latest information about supplier's performance is the crucial part for a company. However, the challenge of changes on suppliers is still faced by the company. Can you share an experience from your past roles where you successfully managed or improved the process of monitoring the changes in supplier capabilities? What technology and strategy did you employ, and what was the outcome of this effort?**

Yes, in my previous role as procurement manager in the ABC Organization, there was also a similar challenge in keeping track of the changes in supplier capability. To address this issue, a systematic approach was implemented which is regular communicate with suppliers and using technology. First, our procurement team organized meetings with potential suppliers every year to review the entire purchasing process. We reviewed any changes in their capabilities, quality, time delivery, environmental and safety standards throughout these discussions. This enabled us to identify any potential problems or interruptions from them. In addition, I introduced a function added to the system that

provided real-time updates on supplier performance and capabilities. The software allowed us to set up automated notifications for any significant changes reported by suppliers. As a result of these initiatives, the issue of changes in supplier capabilities can be solved and yet improved in the whole procurement process.

6. **If you could suggest one of the improvements to the system functionality about keeping track of the changes in supplier capabilities, what would it be?**

   I would recommend adding a new feature such as a supplier survey and feedback mechanism, which can be filled out by end users after they have received the goods and products from the supplier, allowing the company to filter out the top-quality suppliers and have a long-term business relationship with them.

5.2 Design Questionnaires

5.2.1 System Function Problem

1. **Accidental orders and duplicate requests**

   Accidental orders may occur due to user mistakes, system glitches and miscommunication. Ordering wrong items and quantities or duplicating the requests can lead to a serious problem in the procurement process with the suppliers. Although end users may unintentionally submit orders, this also leads to unnecessary purchases, which can have a negative impact on inventory levels and relationships with suppliers. Other than that, system glitches can also cause accidental orders. During the data parsing process, the system may misinterpret the user input and cause inaccuracies in order details. Furthermore, miscommunication between the purchase manager and staff can lead to accidental orders. The existing procurement system also has a complicated system and unclear process that leads end users to find it difficult to use for modifying or cancelling the orders after submission. Due to the complex process, users may be reluctant to rectify the accidental orders, then such problems are likely to take more time to address. The procurement system lacks some functionalities such as a confirmation mechanism before purchasing the orders. Hence, users may place the wrong order without the proper prompts and confirmation dialogues.

2. **The costs of time**

   During the sourcing process, the procurement team will prioritise the prices of the items offered by the supplier. To elucidate, the procurement team is required to invest a lot of time to find a supplier that is best fit to their requirement on the items purchased. At this point, it will eventually lead to a longer lead time. Due to the current system's incompetence, the procurement professionals have to conduct research on those potential suppliers on their own. For instance, their business background, reputation, reviews and ratings from other companies. Not to mention that during the early stage of implementation of the procurement system, the staff are irrefutably unfamiliar with the operation of the system and the procedural steps of the procurement. A significant amount of time is required for them to attend

training so that they can master the system operation and understand the flow of procurement processes.

On the other hand, the system in use currently is underdeveloped with poorly designed system workflow. The procurement team was troubled due to the complex and inefficient processes. The system is lacking a few essential features or functionalities needed for smooth operation, hence imposing the issue such as a prolonged procurement timeline to the procurement team. The system was also suffering from slow response time or frequent downtime, causing delays in the completion of a certain procurement task and a declination of productivity at the same time.

Besides, there is a substantial amount of organisation communication during the procurement processes as it is essential to achieve an agreement from all parties involved so that everyone involved is aligned, understands their role and contributes to successful and favourable procurement outcomes. Occasionally, the poor communication or slow response from other departments or suppliers affects the decision-making and execution, which in turn delay the procurement process. In this case, the procurement timeline is being slowed down again and hence imposing the problem on our procurement system.

5.2.2 Questionnaire Form

QUESTIONNAIRE FORM

Name: _____   **Email:** _____

Phone Number: _____   **Date:** _____

1) What are the additional features or functionalities that can be implemented into the system that could help in balancing the need for quality suppliers and time efficiency?

_____

_____

2) Have you encountered any difficulties or challenges with the current procurement system when placing orders? If so, what are your opinions on potential ways to resolve those difficulties?

_____

_____

3) Have accidental orders or duplicate requests affected inventory levels or relationships with suppliers in the past? Can you describe any instances?

_____

_____

4) What do you think is the reason that causes accidental orders or duplicate requests? Can you briefly explain?

_____

_____

5) What do you think the current system lacks and the improvement on functionalities of the current system that needs to be implemented?

_____

_____

6) Do you think the time invested in training staff to become more familiar with the system is worth the time?

_____

_____

7) On average, how long do you spend on the sourcing process?

◯ Within a week   ◯ Up to 2 weeks   ◯ Up to 3 weeks

◯ Within a month   ◯ More than a month

8) On average, how many times per month did accidental orders or duplicated requests occur?

◯ Less than a time   ◯ 1 - 2 times   ◯ 3 - 4 times

◯ 5 - 6 times   ◯ 6 times or above

Thank you for your time and feedback. Your feedback assists us enhance our procurement system. For further assistance, contact us at purchasedept@samtach.com / 04 - 899 5230

SAMTECH

Full Name: Thomas Lim Wei Chern   Email: thomaslimwc@gmail.com

Phone Number: 016 - 472 6618   Date: 31/11/2023

Open-ended Questions

1. **What are the additional features or functionalities that can be implemented into the system that could help in balancing the need for quality suppliers and time efficiency?**

I understand that quality suppliers are one of the significant elements in protecting the organisation's interest. But in order to look for quality suppliers, lots of time has to be invested and this might be perceived as one of the intangible costs of the organisation. I believe that there are several adjustments and resources that could significantly aid in striking a balance between securing great suppliers and optimising the time efficiency in the procurement process.

Firstly, investing in better supplier databases or platforms that provide comprehensive information about potential suppliers could save a substantial amount of time during the identification phase of the sourcing process. From the platform, we are expecting to access the verified supplier profiles, performance histories and ratings from other business groups. This information is crucial during the initial screening process, allowing us to focus on a more refined selection of suppliers.

Moreover, investing in supplier relationship management tools or

strategies could help maintain and foster relationships with chosen suppliers. It is a fact that parties engaged in partnership or collaboration typically exhibit their peak performance if their relationship is close enough. Therefore , cultivating a long-term partnership with the desired supplier at the first time of selection does not only fulfil the needs of quality suppliers but also reduces the need for extensive re-evaluations for every procurement need if the organisation has to look for a new supplier.

In short, with these adjustments and resources, we can potentially strike a better balance between securing top-notch suppliers and optimising the time invested in the procurement process, which in turn maximises the benefits for the organisation or business.

2. **Have you encountered any difficulties or challenges with the current procurement system when placing orders? If so, what are your opinions on potential ways to resolve those difficulties?**

Indeed, I have encountered some challenges while placing orders using the current procurement system. It is simple for me to navigate through the system to find the required items and initiate orders. But, the problem arises when I delve into the process.

One of the significant difficulties I encountered was the complexity in modifying orders after the submission. There were occasions when I unintentionally selected a wrong quantity or wrong items, and it was an arduous task for me to rectify those errors. The reason is that the system is requesting multiple steps or approval for the modifying process, which prolonged the correction process. For me, I opine that the system has to be more user-friendly and offer a simpler step on order modifying that is needed due to human errors.

In my opinion, to overcome the stated issue, the presence of a confirmation mechanism before finalising the order is one of the best ways to do so. To me, it

will be better if the system is able to show an additional confirmation prompt with the display of the items selected before order submission. This is crucial as it enables me to review the items selected and reduce the risks that may be associated with the order process such as accidental orders and adding unnecessary items into the order. In short, with the existence of confirmation prompts, I do believe that the users will be less prone to mistakes or errors while placing orders.

3. **Have accidental orders or duplicate requests affected inventory levels or relationships with suppliers in the past? Can you describe any instances?**

Yes, accidental orders or duplicate requests has impacted both our inventory levels and relationships with suppliers on several occasions.

Firstly, when we have placed accidental bulk orders, it has resulted in a oversupply of a certain item. This scenario has eventually tied up valuable resources and warehouse space, affecting the inventory management and causing the unnecessary cost of the organisation. Similar case to the duplicate requests, it will also give rise to confusion in inventory tracking. We will have to check on the inventory records to ensure that there are no stockouts or overstock situation whenever duplicate requests occur.

Furthermore, these accidental orders or duplicate requests strained our relationship with suppliers. It is because we will have to request the supplier to cancel the orders on these cases, which eventually causing inconveniences to the supplier. These careless acts will potentially put our relationships with the supplier at risk and impacting further orders or negotiations.

Thus, these incidents underscored the importance of a more foolproof procurement system to prevent accidental orders and duplicates requests. Improvement in these aspects would not only streamline our inventory management but also strengthen our relationships with supplier.

4. **What do you think is the reason that causes accidental orders or duplicate requests? Can you briefly explain?**

I think the main reason that causes duplicate requests is that the current system does not have a tracking system to track pending orders and those orders that are on the way of delivery, thus staff might accidentally send duplicate requests.

Next up, I think the reason that causes accidental orders is that the purchasing department should check the purchase requisition before submitting the order, because in the current system, the purchasing department did not check the purchase requisition before submitting, thus causing accidental order and order of wrong items occur.

5. **What do you think the current system lacks and the improvement on functionalities of the current system that needs to be implemented?**

In my opinion, I think that the current system lacks a tracking system, the tracking system can benefit our company in many ways, one of them is it allows staff to track the orders that are pending or confirmed so that they would not send another order request on the same items.

Secondly, I think the new system should include a list or table of all the items with their item name, item ID, minimum order quantity, maximum order quantity and also sort them in a way that follows their supplier. With this functionality implemented, it can greatly reduce the cost of time for the purchasing department to generate orders.

6. **Do you think the time invested in training staff to become more familiar with the system is worth the time?**

Yes, I think the time invested in training staff to become more familiar with the system is worth the time, because when the staff receives enough training, this can greatly reduce the occurrence of human error.

Other than that, after the training the staff will become more familiar with the system and thus, they can perform better in executing their job, which leads to the staff becoming more efficient in work.

Thus, the time invested in training staff will be worth it for the beneficial effect that they bring to the company afterwards.

Close-ended Questions

7. **On average, how long do you spend on the sourcing process?**

    ☐ Within a week   ☑ Up to 2 weeks   ☐ Up to 3 weeks

    ☐ Within a month   ☐ More than a month

8. **On average, how many times per month did accidental orders or duplicated requests occur?**

    ☐ less than a time   ☑ 1 - 2 times   ☐ 3 - 4 times

    ☐ 5 - 6 times   ☐ 6 times or above

6.0 System Analysis: Fact Recording

6.1 Context Diagram

Procurement Process

When the factories receive orders from customers, but the stock level is low they will send a Purchase Request to the system and the system will help to send the request to the management. If the management approves the request the system will send Request for Quotations to suppliers. After the supplier replies with the quotation the supplier's details will be saved for future use. After that, the management will select the suitable supplier and the system will also generate a purchases order wait for the procurement team to review. After the procurement team review the purchases order, the system will send the purchase order to the selected supplier. When our order is ready to ship the supplier will send us the shipment information.
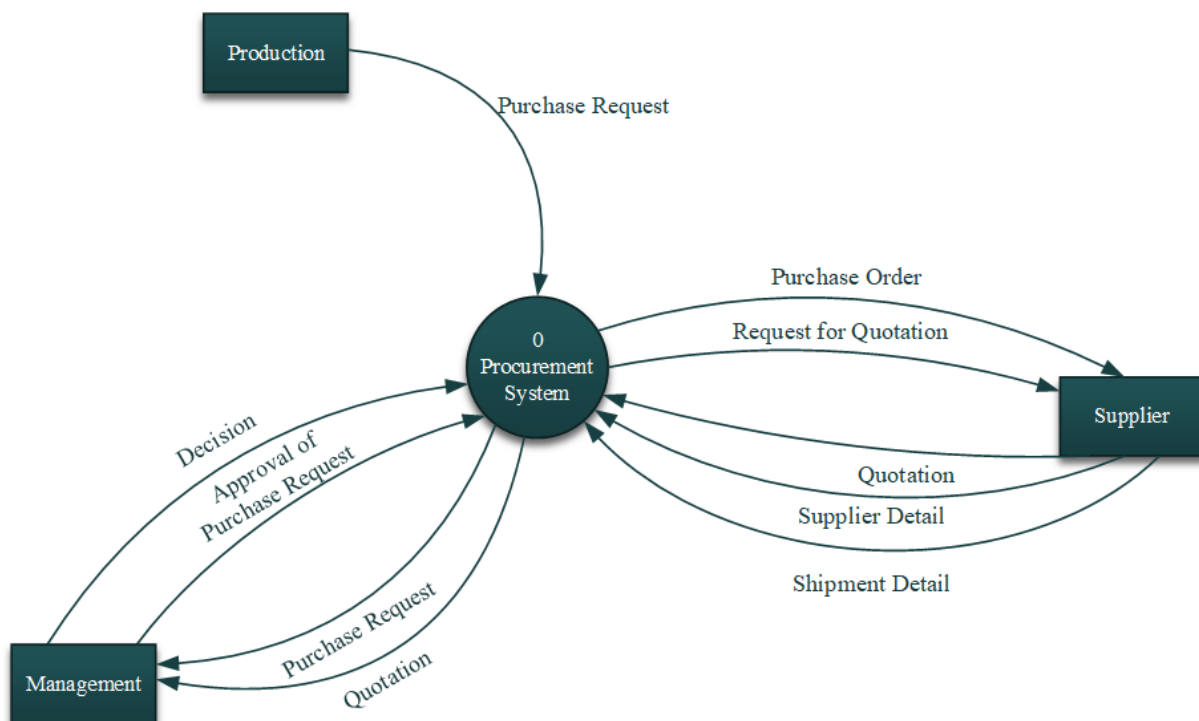

Figure 6. 1 Context Diagram of Samtech's Procurement System
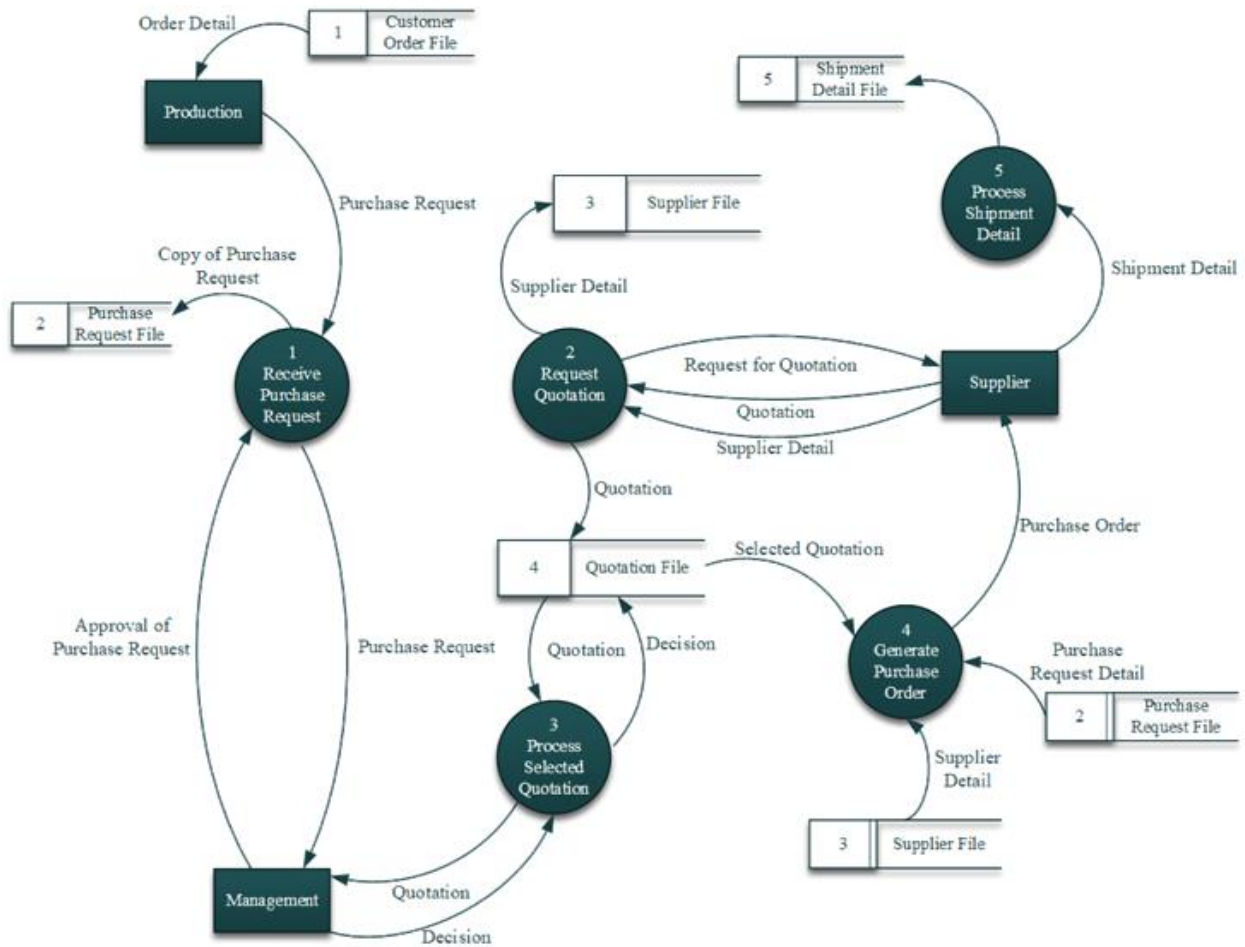
6.2 Diagram 0 DFD

Figure 6. 2 Diagram 0 of Samtech's Procurement System

6.3 ERD (Before Resolve Many-to-Many Relationship)

Figure 6. 3 Entity Relationship Diagram (ERD) of Samtech's Procurement System (Before Resolving Many-to-Many Relationship)

6.4 ERD (After Resolve Many-to-Many Relationship)

Figure 6. 4 Entity Relationship Diagram (ERD) of Samtech's Procurement System (After Resolving Many-to-Many Relationship)

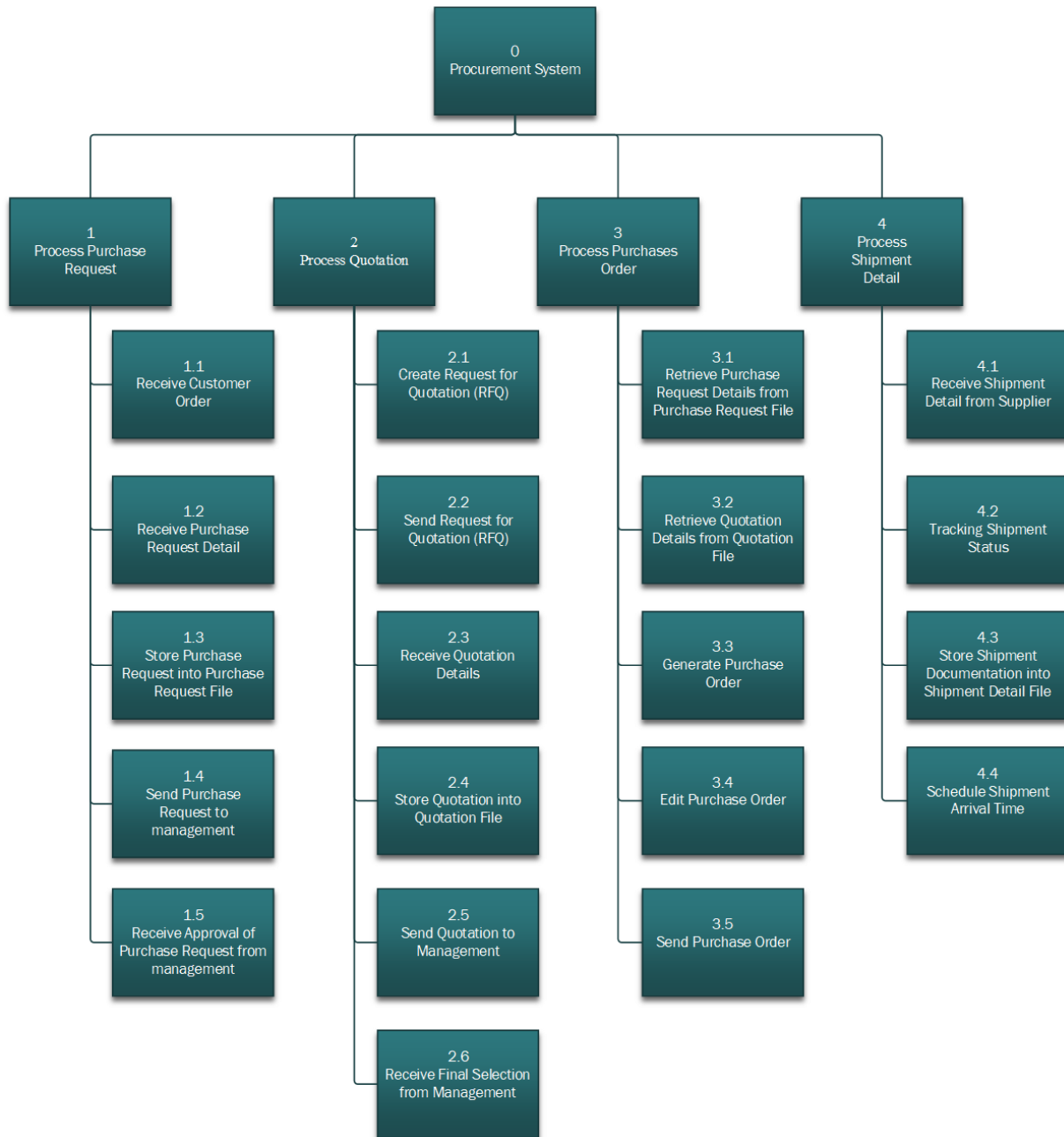# 7.0 System Design - Functional Design

7.1 Functional Structure Chart

Figure 7. 1 Functional Structure Chart

7.2 Describe Sub-system Functions

1) Process Purchase Request

- **Receive Customer Order**

The purchase or procurement process always begin with the demand or request from the customers. It is important to buy for the components or parts to manufacture the end product as requested by the customers. Hence, after collecting and gathering those items needed from the customer order, the production team will notify the procurement team. Procurement team will then be the one responsible to obtain those required items with those suppliers that have selected during the sourcing process.

- **Receive Purchase Request Detail**

Since there is a number of departments existing in our organisation, each of them will be sending the purchase request to the procurement system. Upon receiving the request, the procurement system will check the completeness and accuracy of the information provided. For instance, the checking may include the item descriptions, quantity, preferred vendors, and any necessary authorisation.

- **Store Purchase Request into Purchase Request File**

Storing purchase requests creates an audit trail. This documentation is essential for compliance purposes as well as for internal audits. It helps to trace the history of procurement activities, ensure transparency and accountability. Besides, the stored history can serve as the data that can be analysed to identify patterns, trends, or recurring needs of the organisation. The analysis might be useful in future purchases, supplier negotiations and budget planning. These past records can also contribute to organisational knowledge and improve the decision-making for the upcoming procurement process.

- **Send Purchase Request to Management**

After the procurement team has received and viewed on the Purchase Request, it has to be sent to the management team. The management team will be responsible for the supervision of the Purchase Request and make a final decision on whether to approve or reject the purchase request. Since every purchase is considered as the cost of the organisation, hence involving management in the approval process is essential to mitigate the risk associated with unauthorised spending or purchase that might not align with the company's strategic goals.

- **Receive approval of Purchase Request from Management**

After the certain purchase request has been approved by the Management, then the next procurement process will proceed. The approval of management is usually associated with the feedback from the management team. Understanding the concerns or preferences regarding certain purchases from the management team can help refine the procurement process for better efficiency and effectiveness.

2) Process Quotation

- **Create Request for Quotation (RFQ)**

The procurement department will generate the RFQ document. This document contains detailed information about the required products or services, including the specification, quantity, delivery terms, expected timelines and any other relevant terms and conditions.

- **Send Request for Quotation (RFQ)**

Based on the requirements, the system might have the capability to suggest and identify potential suppliers. Alternatively, procurement personnel can select specific suppliers from existing supplier database or conduct research to find suitable vendors. The RFQ serves as a formal invitation to suppliers to submit their quotations for fulfilling special needs. The distribution of the RFQ could be done electronically through email, a dedicated portal or an integrated communication system within the procurement module.

- **Receive Quotation Details**

Upon receiving the quotations, the system might have the validation checks to ensure the completeness and adherence to specified formats. The quotations received must include information such as pricing, delivery terms, product specifications, and any supporting documents. Besides, the system will also capture the details provided by each of the suppliers and organise it in a proper and structured format within the procurement module. This organised format allows for easy retrieval, comparison and analysis during the suppliers' evaluation and assessment phase.

- **Store Quotation Details to Quotation File**

All the quotation details provided by each of the suppliers are stored into the quotation file. Quotation details are categorised and organised based on various parameters such as supplier name, date of submission, type of products/services offered, pricing, delivery terms and any other relevant criteria. This categorisation facilitates quick and efficient retrieval for future needs.

Practical Assignment Report Assessment

Besides, the systematic record of quotation detail also give rise to a supplier database which can serve as a great source of supplier information that can be used during the analysis, evaluation and selection phase of sourcing process.

- **Send Quotation to Management**

Over here, the purpose of sending quotation to management is kind of similar to the reason of sending Purchase Request to management. The management team will review on all those quotations from different suppliers and evaluate it on various aspects such as the supplier's background, reputation in the market, pricing so on and so forth. In short, the management will conduct comprehensive overview of supplier quotations, evaluating all the options available and making strategic decisions on choosing the quotation so that it is aligned with the organisation's goals.

- **Receive Final Selection from Management**

After the evaluation on every option of the quotations has been done, the final decision and selection from the management will then be forwarded to the procurement team. The procurement team will then proceed with the following steps which is processing of purchase order with the selected supplier. A lot of terms and agreements will be discussed with the selected supplier as well.

3) Process Purchases Order

- **Retrieve Purchase Request Details from Purchase Request File**

After the management decides on the suitable quotation, the procurement system will retrieve the purchase request details from the purchase request file to fill in the item we need to buy and the quantity we need.

- **Retrieve Quotation Details from Quotation File**

The system will also retrieve the selected quotation details from the quotation file to know which supplier we want to purchase from. The system will also use the information on the quotation to fill in the item name, item code and calculate the price.

- **Generate Purchase Order**

When the system gathers all the required information it will generate the Purchase Order form and wait for our procurement team to review.

- **Edit Purchase Order**

If there is some problem in the purchases order (such as: wrong address, wrong quantity) the procurement team can edit the detail in it.

- **Send Purchase Order**

After reviewing the Purchase Order form, if there is no problem the procurement team can click on the submit button and the system will send the purchase order form to the supplier.

4) Process Shipment Detail

- **Receive Shipment Detail from the Supplier**

After submitting the purchase order to the supplier, we are expected to receive shipment details from the supplier. Examples of shipment details include shipping documents, invoice, packing slips, tracking number, and other pertinent information. The procurement team will then verify and validate the shipment details so that it matches the order specification, quantities, or other specific requirements during the negotiation process.

- **Tracking shipment status**

The procurement team will be tracking and monitoring the shipment status continuously. This is essential to ensure that the goods or services are delivered in the rate as specified in the shipment detail as any slight delay in shipment will indirectly extending the time needed to manufacture the end products as requested by the customer. In this case, the system might integrate with the logistic system that can provide real time's location and estimated arrival time of the shipment up to a certain degree of accuracy.

- **Store the shipment documentation into shipment detail file**

Shipment documentation is organised and stored in a dedicated file or database within the system. To elaborate, when the goods or items arrived, three-way matching will be carried out by comparing the packing slip, purchase order and invoice. Hence, the shipment documentation is categorised and stored in a proper manner to ease the future retrieval and access action. Besides, the storing of shipment documentation is also required for audit purposes, as it allows the organisation to have clear and transparent audit trail record.

- **Schedule Shipment Arrival Time**

The procurement system will be coordinate and integrate with the logistic or carrier partners to schedule the arrival time of the shipments. Over here, several factors have to be considered such as transit times, delivery windows, recipient availability and any special requirements. The shipment arrival time must be planned so that it does not crashes with the organisation working schedule. Once the procurement system has scheduled the arrival time, a confirmation message will be sent to the parties involved to streamline the shipment process.

Practical Assignment Report Assessment

8.0 System Design – Inputs

8.1 Data Input Screen

Figure 8. 1 Input Screen of Purchases Order

Practical Assignment Report Assessment

8.2 Identify Validation Checks

Figure 8. 2 Input Screen of Purchases Order with Label

Practical Assignment Report Assessment

Table 8. 1 Validation Check Data

No.	Field Name	Input Method	Validation Check	Explanation
1	Purchase Order	Drop-down List	None	The data will be selected from a list of options in the drop-down menu.
2	Order Date	System Filled	None	The data of the date is read from the device used.
3	Employee's ID	Barcode Scanned	Existence Check Null Value Check	The data will be filled in automatically when employee scan their employee's card using the barcode scanner. The system will check whether the data matched with the employee's database. The system would not proceed if no value entered in this field.
4	First Name	Automatically Generated	None	The data is automatically filled in after scanning employee's card by retrieving data from database.
5	Last Name	Automatically Generated	None	The data is automatically filled in after scanning employee's card by retrieving data from database.
6	Contact Number	Automatically Generated	None	The data is automatically filled in after scanning employee's card by retrieving data from database.
7	Email	Automatically Generated	None	The data is automatically filled in after scanning

Practical Assignment Report Assessment

				employee's card by retrieving data from database.
8	Department	Automatically Generated	None	The data is automatically filled in after scanning employee's card by retrieving data from database.
9	Vendor's ID	Automatically Generated	None	The data is automatically filled in based on the purchase requisition.
10	Vendor's Company	Automatically Generated	None	The data is automatically filled in based on the purchase requisition.
11	Vendor's Address	Automatically Generated	None	The data is automatically filled in based on the purchase requisition.
12	Vendor's State	Automatically Generated	None	The data is automatically filled in based on the purchase requisition.
13	Vendor's Postcode	Automatically Generated	None	The data is automatically filled in based on the purchase requisition.
14	Vendor's Contact Number	Automatically Generated	None	The data is automatically filled in based on the purchase requisition.
15	Vendor's Email	Automatically Generated	None	The data is automatically filled in based on the purchase requisition.
16	Warehouse	Automatically Generated	None	The data is automatically filled in based on the purchase requisition.
17	Warehouse's Unit Number	Automatically Generated	None	The data is automatically filled in based on the purchase requisition.

18	Warehouse's Shipping Address	Automatically Generated	None	The data is automatically filled in based on the purchase requisition.
19	Warehouse's State	Automatically Generated	None	The data is automatically filled in based on the purchase requisition.
20	Warehouse's Postcode	Automatically Generated	None	The data is automatically filled in based on the purchase requisition.
21	Shipping Method	Drop-down List	Null Value Check	The data will be selected from a list of options in the drop-down menu. The system would not proceed if no value entered in this field.
22	Delivery Date	Manual Keying	Null Value Check	The data is entered by selecting the date from the calendar provided. The system would not proceed if no value entered in this field.
23	Item's Number	Automatically Generated	None	The data is automatically filled in based on how many items ordered from the purchase requisition.
24	Item's ID	Automatically Generated	None	The data is automatically filled in based on the purchase requisition.
25	Item's Name	Automatically Generated	None	The data is automatically filled in based on the item's ID from the purchase requisition.
26	Item's Description	Automatically Generated	None	The data is automatically filled in based on the purchase requisition.

27	Item's Quantity	Automatically Generated	None	The data is automatically filled in based on the purchase requisition.
28	Item's Unit Cost	Automatically Generated	None	The data is automatically filled in based on the item ordered from the purchase requisition.
29	Remarks/Notes	Manually Keying	None	Let employee filled in remarks or notes if there is any.
30	Sub-Total	Automatically Generated	None	The data is automatically calculated and filled in.
31	Tax Rate	Automatically Generated	None	The data is automatically calculated and filled in.
32	Discount	Automatically Generated	None	The data is automatically calculated and filled in.
33	Shipping's Fee	Automatically Generated	None	The data is automatically calculated and filled in.
34	Total	Automatically Generated	None	The data is automatically calculated and filled in.

8.3 Describe User-Friendliness Features

Figure 8.3 Input Screen of Purchases Order with User-Friendliness Features Label
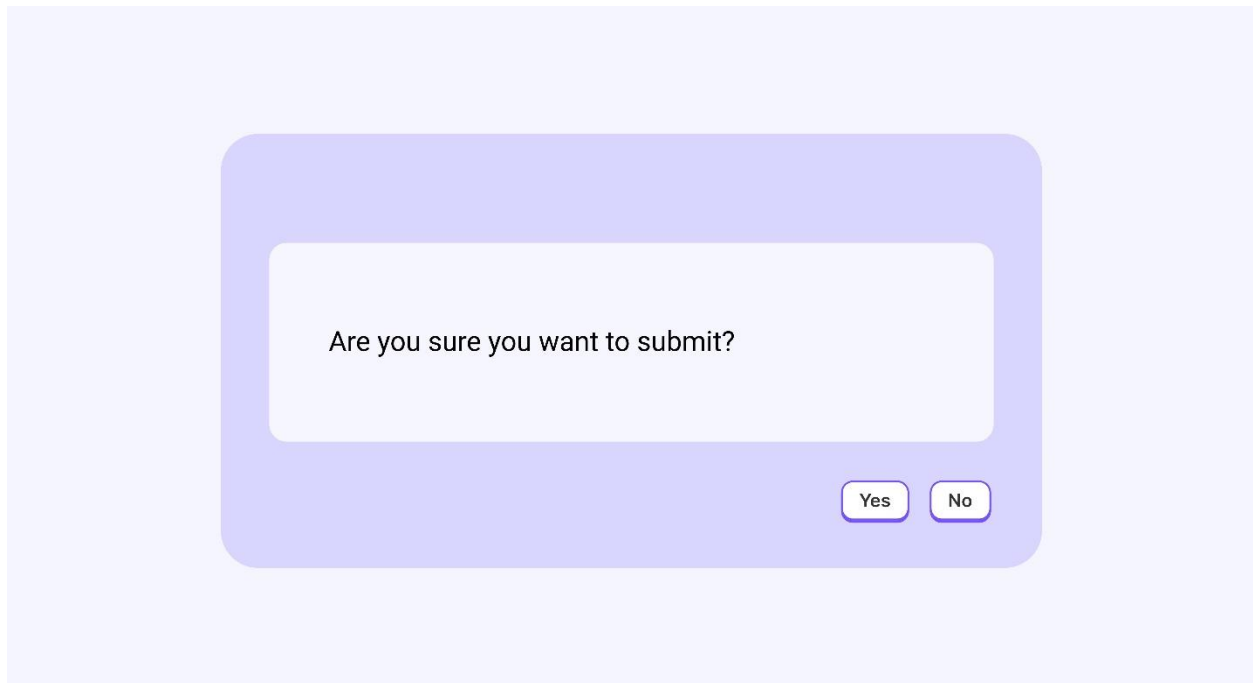
Figure 8.4 Confirmation Input Screen for Submitting Purchases Order

Ease of Data Entry

Upon scanning the barcode using a barcode scanner, the system automatically facilitates the data entry of information such as employee ID, first name, last name, contact number, and email. This streamlined process significantly reduces the need for manual inputs, concurrently maximizing accuracy through reliance on machine-readable information.

This feature within the system is designed to minimize human errors commonly linked to manual data entry tasks. By automating data generation and strategically structuring input processes, the likelihood of errors is diminished, enhancing the overall precision and reliability of the data entered.

Escapability

After the user has filled out the form, he or she will click on the submit button in order to generate a formal purchase order form. Once the button is clicked, the system will show a confirmation screen for the user to confirm whether to submit the form or cancel it. This step ensures that users have a final opportunity to review their inputs before confirming the submission.

Acknowledging that users may make mistakes when using or learning to use the system, the system then is designed to accommodate these learning curves. This feature provides a

confirmation step that gives users the last chance to check errors if any or cancel the submission if needed. Thus, it is important to have this kind of user-friendliness feature to cover their potential mistakes.

9.0 System Design – Data Definition

9.1 Make a Copy of ERD (Resolved)
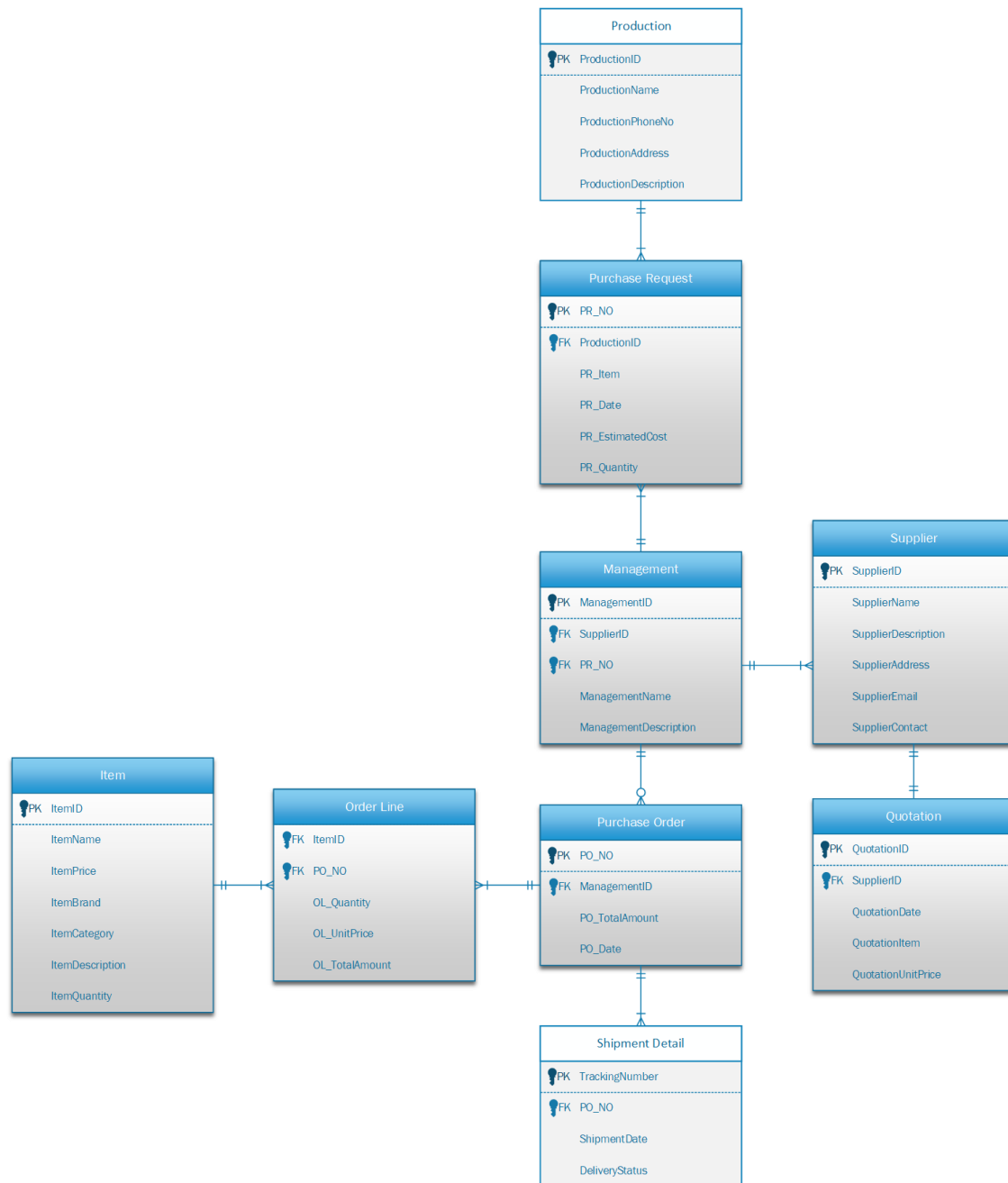
Figure 9. 1 Entity Relationship Diagram (ERD) of Samtech's Procurement System (After Resolving Many-to-Many Relationship)

9.2 Create Attributes

PURCHASE_REQUEST (<u>PR_NO</u>, PR_Item, PR_Date, PR_Quantity, PR_EstimatedCost, ProductionID*)

MANAGEMENT (<u>ManagementID</u>, ManagementName, ManagementDescription, SupplierID*, PR_NO*)

SUPPLIER (<u>SupplerID</u>, SupplierName, SupplierDescription, SupplierAddress, SupplierEmail, SupplierContact)

QUOTATION (<u>QuotationID</u>, QuotationDate, QuotationItem, QuotationUnitPrice, SupplierID*)

PURCHASE_ORDER (<u>PO_NO</u>, PO_TotalAmount, PO_Date, ManagementID*)

ITEMS (<u>ItemID</u>, ItemName, ItemPrice, ItemBrand, ItemCategory, ItemDescription, ItemQuantity)

ORDER_LINE (<u>ItemID*</u>, <u>PO_NO*</u>, OL_Quantity, OL_UnitPrice, OL_TotalAmount)

10.0 System Design - Database

10.1 Select Entities and Draw an ERD
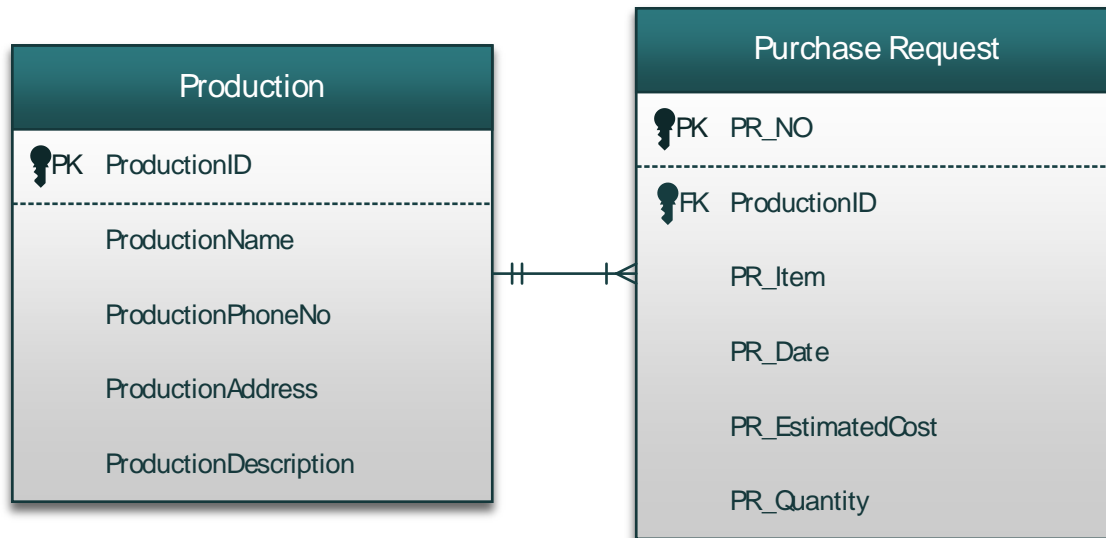
Figure 10. 1 Selected Two Entities

10.2 Design Code

Table 10. 1 Sample Code of Production Code

Code Design (Production)	
Data	**Code**
ProductionID	HA-002
Production Name	HA
Sequence of Production Team	002

Table 10. 2 Explanation of Production Code

HA-002		
Code	**Full Text**	**Explanation**
HA	Home Appliances	We use the first letter of the production team name as the code.
002	002	This mean that this is the second production team created.

Practical Assignment Report Assessment

Table 10. 3 Sample Code of Purchase Request Code

Code Design (Purchases Request)	
Data	**Code**
PR_NO	PR231219-001
Documentation Name	Purchases Request
Date of Submission	19/12/2023
Sequence of Purchases Request	001

Table 10. 4 Explanation of Purchase Request Code

PR231219-001		
Code	**Full Text**	**Explanation**
PR	Purchases Request	We use the first letter of the documentation name as the code.
231219	19/12/2023	The date will be use as part of the code to provide a unique code for every record. The first two digits of the code are the last two digits of the year, the third and fourth digits are the month, the last two digits of the code are the day.
001	001	This mean that this is the first purchases request submitted.

10.3 Populate Data Records

Table 10. 5 Populate Data Record of Production

Production				
ProductionID	**ProductionName**	**ProductionPhoneNo**	**ProductionAddress**	**ProductionDescription**
HA-001	Home Appliance	03-23789991	22, Puncak Pinggiran Putra, 43000 Kajang, Selangor	Produce the component for Home Appliance
HA-002	Home Appliance	04-26329824	28, Medan Rajawali, Solaria Square, 11900 Bayan Lepas, Penang	Assemble the component of Home Appliance
MD-001	Mobile Device	04-28569913	28, Medan Rajawali, Solaria Square, 11900 Bayan Lepas, Penang	Assemble the component of Smart Phone
MD-002	Mobile Device	03-26397732	22, Puncak Pinggiran Putra, 43000 Kajang, Selangor	Produce the component for Smart Phone
PA-001	Personal Audio	03-28578925	22, Puncak Pinggiran Putra, 43000 Kajang, Selangor	Produce and assemble the components of personal audio

Practical Assignment Report Assessment

Table 10. 6 Populate Data Record of Purchases Request

Purchases Request					
PR_No	**ProductionID***	**PR_Item**	**PR_Date**	**PR_Quantity**	**PR_EstimateCost**
PR231120-001	HA-001	Oled Screen	20/11/2023	5,000	500,000
PR231120-002	MD-002	Phone Battery	20/11/2023	1,000	100,000
PR231123-001	PA-001	Headset Driver	23/11/2023	2,000	40,000
PR231128-001	SP-002	Phone Oled Screen	28/11/2023	2,000	100,000
PR231128-002	HA-002	Pentalobe screw	28/11/2023	1,000,000	50,000
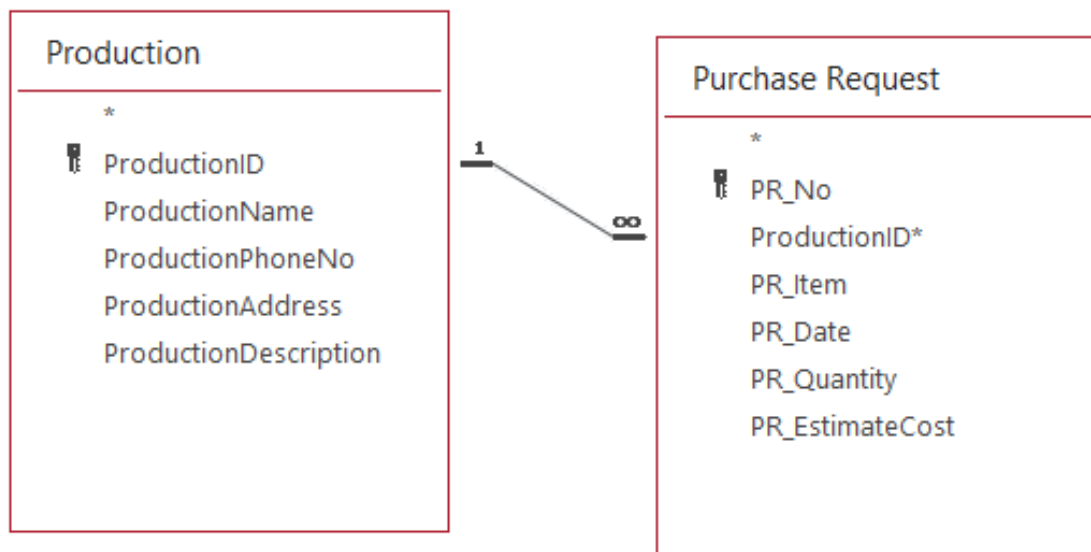
Figure 10. 2 Relationships Between the Production and Purchase Request Tables

11.0 System Design – Outputs / Reports

11.1 Design a Summary Report

SAMTECH SDN BHD
77, Lorong Lembah Permai 3, 11200, Tanjung Bungah
Pulau Pinang, Malaysia

Tel: 04-2356982   Email: mail-samtech@samtech.com

Purchases Analysis Reports for The Year 2021 to 2023

TOTAL PURCHASE SUMMARY GRAPH FOR THE YEAR 2021 TO 2023

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2021	1,000,000	450,000	380,000	320,000	400,000	600,000	480,000	280,000	370,000	300,000	500,000	210,000
2022	1,200,000	350,000	480,000	380,000	460,000	520,000	380,000	340,000	360,000	270,000	450,000	180,000
2023	900,000	550,000	410,000	390,000	380,000	720,000	400,000	300,000	420,000	250,000	400,000	230,000

TOTAL PURCHASE SUMMARY FOR EACH PRODUCTION CATEGORY FOR THE YEAR 2021 TO 2023

	Home Appliance	Mobile Devices	Personal Audio
2021	1,550,000	2,540,000	1,200,000
2022	1,620,000	2,460,000	1,290,000
2023	1,640,000	2,600,000	1,110,000

Figure 11. 1 Purchase Analysis Report

Practical Assignment Report Assessment

Table 11. 1 Explanation of Summary Report

No.	Report Title	Report Content	Who Use	Purpose/Decision
1	Purchase Analysis Report for the Year 2021 to 2023	This report summarises the total purchase in month from 2021 to 2023 and summarises total purchase of each production category from 2021 to 2023	Procurement Manager, Finance Manager	From this report we can observe the spending patterns of the organization. From the spending pattern the management will be able to understand how money is being spent across various categories and departments. Therefore, through this report the finance manager can based on this analysis report to compare the actual spend with the budget and set a budget for the organization. Besides, the procurement manager can use this data to optimise the procurement process such as: better bargain power (For Example: the procurement manager can use this data to bargain with the key supplier who supply the category which we spend more in.)

11.2 Design an Exception Report
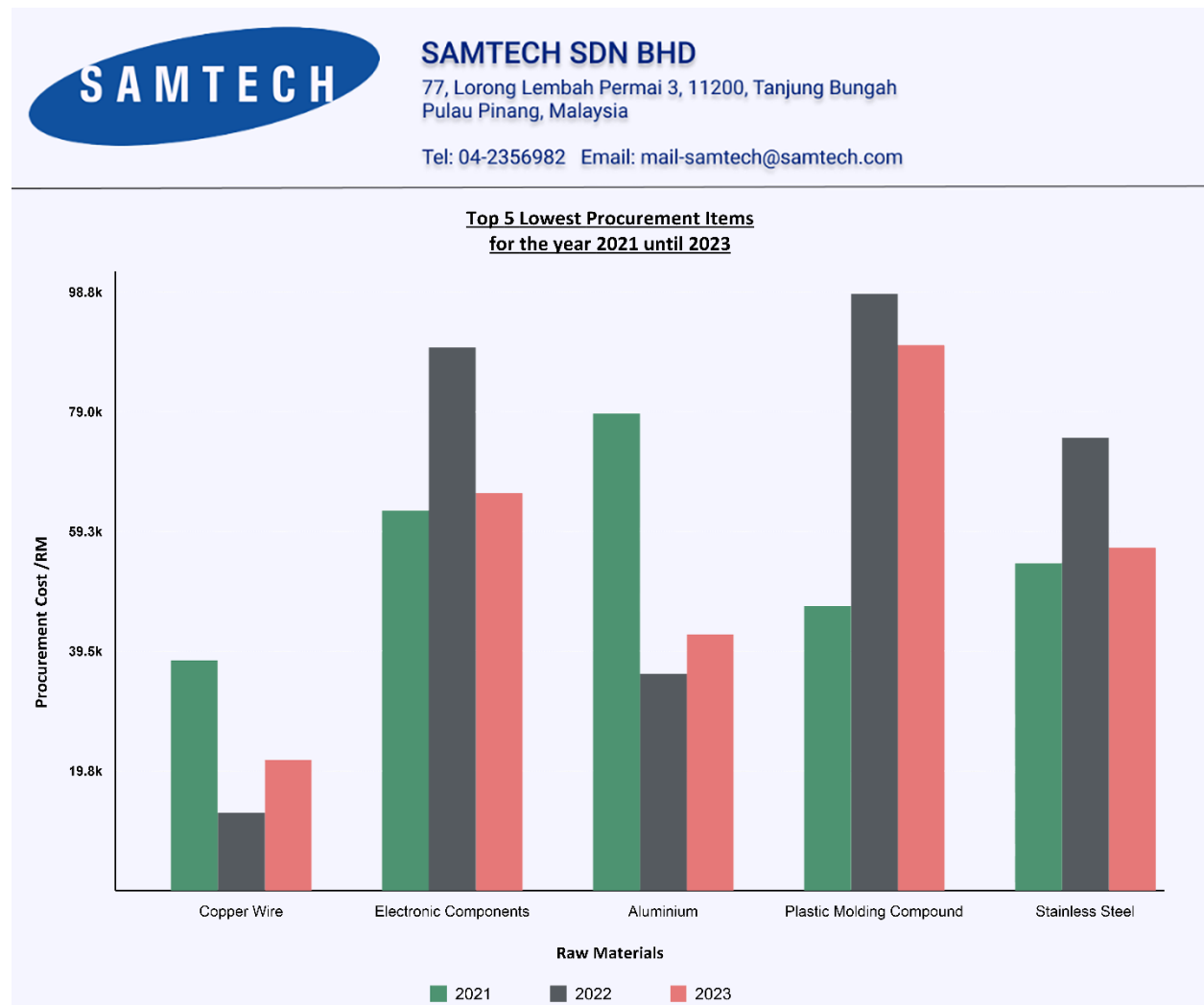
Figure 11. 2 Exception Report

Table 11. 2 Explanation of Exception Report

No.	Report Title	Report Content	Who Use	Purpose/Decision
2	Top 5 Lowest Procurement Items for the year 2021 until 2023	To display the top 5 items with the lowest procurement record for three continuously years.	Procurement Manager, Sales & Marketing Manager	From the report, it can be observed that the 5 items listed in the report are in the lowest procurement record for consecutively three years, i.e. from the year of 2021 until 2023. After the preliminary investigation to

				be done, it is found that due to low sales of the end-products that were manufactured by these items, causes production site to reduce sending purchase requisition on these items. Hence, the marketing manager will find the way to improve the sales of those end-products by having some promotions, as well as improve on advertising. At the same time, the procurement manager needs to readjust the minimum stock level for these items according to the report, so that it can reduce the company's loss. If the effect done by the sales and marketing manager does not show any effect, the last resort would be to discontinue the sales of those end-products.

12.0 Conclusion

This research has provided valuable insights into Software Development Life Cycle (SDLC), system analysis and design. In order to understand the prerequisites in developing and designing an efficient procurement system, the assignment navigates through the crucial phases of the Software Development Life Cycle (SDLC). Beginning with a comprehensive exploration of the organisation's background of an esteemed company, Samsung Group, the journey proceeded through a series of activities such as analysis of system functionality, creation of Data Flow Diagram (DFD), design of system interface etc.

After identifying the users' need through preliminary investigation, we are heading into the system planning phase in which feasibility studies are considered over here. As this procurement system is set for a new implementation, it is imperative to access its viability by evaluating whether the benefits outweigh the associated costs. Subsequently, the planning phase offers a structed approach to align the organisation's needs with the envisioned functionalities of the procurement system.

Followed by next is the analysis phase which encompasses the fact gathering and recording. For the fact gathering, we are applying the techniques of interviewing and distributing questionnaire. Through the process of fact gathering, we are moving closer to understand the user's needs and requirements, gaining valuable insights into the functions or features that the system should possess. While the analysis phase is then proceeded with fact recording, involving an in-depth exploration of the Data Flow Diagram and Entity Relationship Diagram. These diagrams serve as valuable tools in providing insights into the system's data flow concepts.

Transitioning into the system design phase, the focus shifts towards the tangible representation of the system through the design of the data input screens. This critical phase does not only shape the user interface but also incorporated data input validation, ensuring the integrity and accuracy of information input into the system. Not to mention that the user-friendliness feature is also taken into account while developing the data input screen to ensure that the design is not troubling to those users. The system design also encompasses other critical processes, including database design, code development and report generation. For the database design, we are showing the examples of reports on the data attributes of the chosen entities. While for the code development, we have demonstrated the code pattern of the primary key of those chosen entities. The last part will be the design of summary and exception report.

Practical Assignment Report Assessment

Basically, the generated report serves as a useful graphical tool. providing us with the analytical insights into the essential data within our system. For instance, our reports centers on the purchase summary of our company ranging from 2021 to 2023. This comprehensive overview will then be reviewed by the management team, empowering them to make informed decisions regarding the alignment of the summarised data with the organisation's objectives.

Although we can contribute to the development and expansion of organizations with the knowledge gained, it is essential to acknowledge the limitations and constraints of our study. We just conducted the research theoretically, not involving any practical activities in it. As a result, a clear gap will be revealed between theory and reality. All in all, as a recommendation for future research, we could investigate and carry out some practical activities in similar studies to gain a more thorough knowledge. Overall, this study emphasizes the significance of system analysis and design and its impact on every business.

References

Indeed Editorial Team. (2023, March 4). What Is Procurement Management? Benefits and Strategies. Retrieved from https://www.indeed.com/career-advice/career-development/what-is-procurement-management/

Neufeld, D. (2023, July 24). Ranked:The Top 100 Brands by Value in 2023. Retrieved from https://www.visualcapitalist.com/top-100-brand-value-2023/

Counterpoint. (2023, Nov 10). Global Smartphone Shipments Market Data. (2023). Retrieved from https://www.counterpointresearch.com/insights/global-smartphone-share/

Jenkins, A. (2023, September 5). What is Procurement? Types, Processes & Technology https://www.netsuite.com/portal/resource/articles/accounting/procurement.shtml

What is Procurement Management. (2023, August 17). Retrieved from https://www.michiganstateuniversityonline.com/resources/supply-chain/what-is-procurement-management/

Global 500 2023 Ranking. (2023). Retrieved from https://brandirectory.com/rankings/global/table

Mordor Intelligence. Monitor Market Size & Share Analysis - Growth Trends & Forecasts(2023-2028). (2023). Retrieved from https://www.mordorintelligence.com/industry-reports/computer-monitor-market

Largest Semiconductor Companies by Market Cap. (2023). Retrieved from https://companiesmarketcap.com/semiconductors/largest-semiconductor-companies-by-market-cap/

Fajar Baskoro. (2018, September 26). System Request. Retrieved from https://www.slideshare.net/fajarbaskoro/systems-request

SAMSUNG. (2022). *Our Business | About Us*. Samsung Us. Retrieved from https://www.samsung.com/us/about-us/our-business/

Practical Assignment Report Assessment

Samsung (005930.KS) - Revenue. (n.d.). Companiesmarketcap.com. Retrieved from
https://companiesmarketcap.com/samsung/revenue/#:~:text=Revenue%20in%202023%2
0(TTM)%3A

Statista. (2010). Samsung smartphone sales worldwide 2010-2019 | Statistic. Statista; Statista.
Retrieved from https://www.statista.com/statistics/299144/samsung-smartphone-
shipments-worldwide/

Laricchia, F. (2022, April 4). Samsung revenue split by region worldwide 2011-2018 | Statista.
Statista; Statista. Retrieved from https://www.statista.com/statistics/237092/share-of-
revenue-at-samsung-electronics-by-region/

Cuofano, G. (2022, August 19). What Is Samsung's Organizational Structure? Samsung
Organizational Structure In A Nutshell. FourWeekMBA. Retrieved from
https://fourweekmba.com/samsung-organizational-
structure/#:~:text=Samsung%20consists%20of%20three%20product

Saoke Maurice Ogolla. (2017). Roles and Responsibilities in Procurement Part. Retrieved from
https://www.linkedin.com/pulse/roles-responsibilities-procurement-part-i-role-end-
maurice-ogolla

Top 6 Procurement Challenges that Haunt Your Business. (2023, November 27). Retrieved
from https://kissflow.com/procurement/procurement-
challenges/#:~:text=Supply%20risk%20is%20always%20a,procurement%20leaders%20
up%20all%20night

Ralph Lu. (N/A). Context Diagram Purchasing [classic]. Retrieved from
https://creately.com/diagram/example/ibddzl4r1/context-diagram-purchasing-classic

10 continuous improvements you need to know. (2023). Retrieved November 10 2023 from
https://www.solvexia.com/blog/5-continuous-improvement-examples-you-need-to-know

Dr. Muddassir Ahmed, Ph.D. Top 17 Challenges Faced in Procurement Management and their
Solutions. Retrieved from https://www.scmdojo.com/procurement-problems-solution/

Practical Assignment Report Assessment

What is A Supplier Database? - Definition. (n.d.). Retrieved from

https://oboloo.com/blog/what-is-a-supplier-database-definition/

Zycus. (2019, March 5). Procurement process: 7 steps for optimal efficiency and cost savings.

Retrieved from https://www.zycus.com/blog/procurement-technology/you-didnt-know-

these-7-steps-of-an-effective-procurement-process

Harris, R. (2021, March 18). Database Design QuickStart Guide. Retrieved from

https://www.linkedin.com/pulse/database-design-quickstart-guide-richard-harris