Internship Report on “Driving Operational Excellence in Supply Chain through ERP Implementation at Rancon Industrial Solutions Ltd.”

Juhayer Rouf

This report is submitted to the school of Business and Economics, United International University as a partial requirement for the degree fulfillment of Bachelor of Business Administration

United International University

School of Business and Economics, SoBE

Internship Report on

Internship Report on "Driving Operational Excellence in Supply Chain through ERP Implementation at Rancon Industrial Solutions Ltd."

Course Title: Internship

Course Code: INT 4399

Submitted to:

Dr. Saad Hasan

Associate Professor

School of Business and Economics, United International University

Submitted by:

Juhayer Rouf

111 211 092

Major: Supply Chain Management

Registration Trimester: Summer 2025

Date of Submission: March 10, 2026

Letter of Transmittal

March 10, 2026

Dr. Saad Hasan

Associate Professor

School of Business and Economics

United International University

Subject: Submission of Internship Report

Dear Sir,

I'm pleased to submit my internship report titled **"Driving Operational Excellence in Supply Chain through ERP Implementation at Rancon Industrial Solutions Ltd."** I began my internship in the **Supply Chain** department at Rancon Industrial Solutions Limited's Corporate Office on July 16, 2025 and it ended on October 20, 2025, having a tenure of 3 months. Throughout my employment, I have learned a great deal about the company's functions and operations I was able to connect core concepts to real applications.

I tried to accomplish the report using my observations and practical knowledge that I implemented. I have worked hard to complete this report properly according to your given instructions. I have covered all the points you mentioned in our earlier discussions, and I am confident that you will find this report not only informative but all the hard work that was put into this will be reflective on the quality of the work. I strongly hope that I will be able to meet the objectives of the internship program, and that you will accept it. Thank you for your help, valuable advices and cordial support.

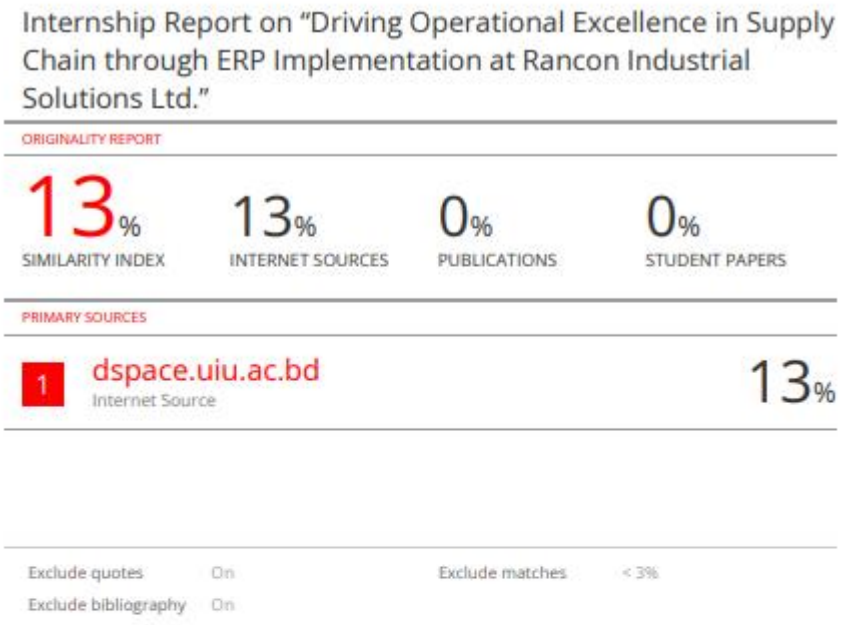
Sincerely yours,

Juhayer

Juhayer Rouf

ID No: 111 211 092

Certification Of Similarity Index



Internship Report on "Driving Operational Excellence in Supply Chain through ERP Implementation at Rancon Industrial Solutions Ltd."

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Declaration of the Student

I Juhayer Rouf, hereby declare that this internship report is work of my own and has not been submitted previously, either in full or in part, to any other institution for any degree or any other purpose.

Juhayer Rouf

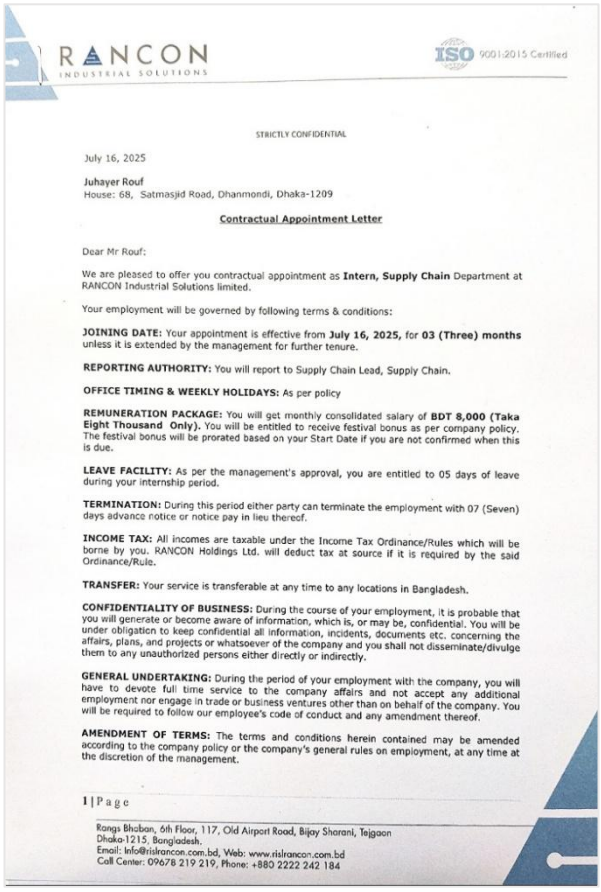
ID: 111 211 092

School of Business and Economics, SoBE

United International University

Enrolled Trimester: Summer 2025

Corporate Evidence



RANCON
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July 16, 2025

Juhayer Rouf
House: 68, Satmasjid Road, Dhanmondi, Dhaka-1209

Contractual Appointment Letter

Dear Mr Rouf:

We are pleased to offer you contractual appointment as **Intern, Supply Chain** Department at RANCON Industrial Solutions limited.

Your employment will be governed by following terms & conditions:

JOINING DATE: Your appointment is effective from **July 16, 2025,** for **03 (Three) months** unless it is extended by the management for further tenure.

REPORTING AUTHORITY: You will report to Supply Chain Lead, Supply Chain.

OFFICE TIMING & WEEKLY HOLIDAYS: As per policy

REMUNERATION PACKAGE: You will get monthly consolidated salary of **BDT 8,000 (Taka Eight Thousand Only).** You will be entitled to receive festival bonus as per company policy. The festival bonus will be prorated based on your Start Date if you are not confirmed when this is due.

LEAVE FACILITY: As per the management's approval, you are entitled to 05 days of leave during your internship period.

TERMINATION: During this period either party can terminate the employment with 07 (Seven) days advance notice or notice pay in lieu thereof.

INCOME TAX: All incomes are taxable under the Income Tax Ordinance/Rules which will be borne by you. RANCON Holdings Ltd. will deduct tax at source if it is required by the said Ordinance/Rule.

TRANSFER: Your service is transferable at any time to any locations in Bangladesh.

CONFIDENTIALITY OF BUSINESS: During the course of your employment, it is probable that you will generate or become aware of information, which is, or may be, confidential. You will be under obligation to keep confidential all information, incidents, documents etc. concerning the affairs, plans, and projects or whatsoever of the company and you shall not disseminate/divulge them to any unauthorized persons either directly or indirectly.

GENERAL UNDERTAKING: During the period of your employment with the company, you will have to devote full time service to the company affairs and not accept any additional employment nor engage in trade or business ventures other than on behalf of the company. You will be required to follow our employee's code of conduct and any amendment thereof.

AMENDMENT OF TERMS: The terms and conditions herein contained may be amended according to the company policy or the company's general rules on employment, at any time at the discretion of the management.

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Rangs Bhaban, 6th Floor, 117, Old Airport Road, Bijoy Sharani, Tejgaon
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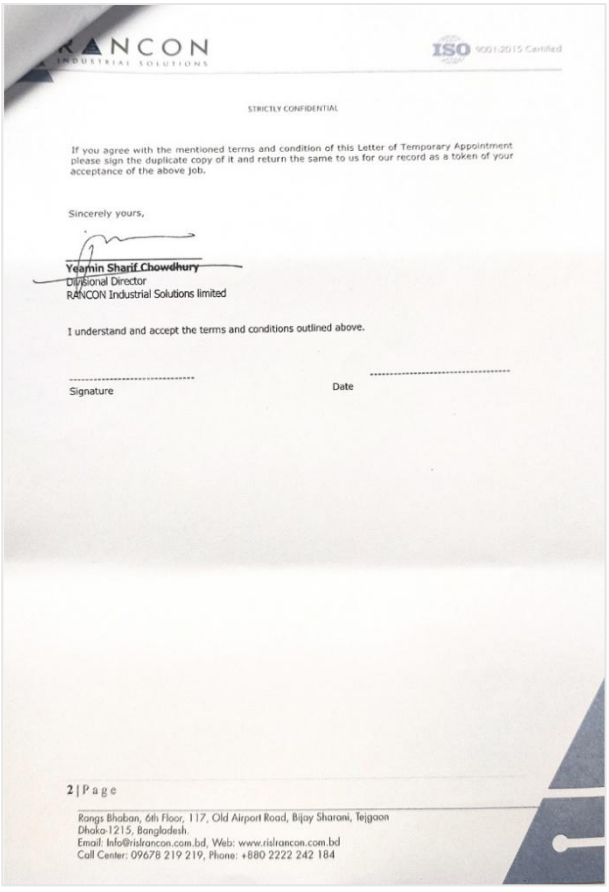

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If you agree with the mentioned terms and condition of this Letter of Temporary Appointment please sign the duplicate copy of it and return the same to us for our record as a token of your acceptance of the above job.

Sincerely yours,

Yeamin Sharif Chowdhury
Divisional Director
RANCON Industrial Solutions limited

I understand and accept the terms and conditions outlined above.

Signature

Date

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Rangs Bhaban, 6th Floor, 117, Old Airport Road, Bijoy Sharani, Tejgaon
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Acknowledgement

First of all, all praises and honor to the Almighty Allah. This report would not have been completed without the blessings of Allah. Despite several hurdles, I am grateful to Almighty Allah for giving me the strength, courage, and competence to complete my internship and internship report on time.

To begin, I would like to express my appreciation to Dr. Saad Hasan my internship supervisor. His helpful thoughts, advices, and recommendations made things clear. I am very thankful to **Dr. Saad Hasan** sir as my internship supervisor, considering he is one of the most supporting faculties I came across during my university life and I did 4 of the major courses under his guidance. With his assistance and immense support, I was able to complete everything in a logical and timely manner. He kept me on track to complete my report, and his motivations were crucial in ensuring that it was as flawless and relaxing as possible.

Following that, I must express my gratitude to my line manager **Md. Shariful Islam**, Manager and Supply Chain Lead at Rancon Industrial Solutions Ltd. He happily accepted my responsibility, provided me with quality time, and shared his professional experiences with me. His rules not only taught me about the company culture, but also how to cope with coworkers.

Then there comes **Mr. Masbah Mahbub** who is the Assistant General Manager of Rancon Holdings Division's, he was a tremendous inspiration and a huge help to me. I learnt a lot more from this excellent man than I imagined, and I will remember everything he taught me from his precious experience. There are no words to describe such a man, who was always there for me like a brother when I couldn't do things correctly, and he is **ANM Emtiaz Javed Akanda**, Assistnt Manager of the supply chain department.

In addition, I want to express my heartfelt gratitude to everyone in the supply chain department of Rancon Holdings Division who helped me out during my internship period and made my internship journey a great experience indeed.

Executive Summary

This report, titled "**Driving Operational Excellence in Supply Chain through ERP Implementation at Rancon Industrial Solutions Ltd.** - An Internship Experience Perspective", which is based on the knowledge and experience gained during my internship at Rancon Industrial Solutions Ltd.'s Supply Chain department.

This report carries various aspects and information about the supply chain activities and operations of Rancon Industrial Solutions Ltd. The study explores how an Enterprise Resource Planning (ERP) system serves as a survival necessity and a driver of excellence in the competitive electrical and engineering services industry. RISL is one of the leading and prominent Electrical and Engineering services providers in Bangladesh.

The report comprises initially an introduction part where the objectives, research methods, study limitations and significance of the report are illustrated. The second portion of this study includes Rancon Industrial Solutions Ltd.'s corporate profile, purposes, organizational hierarchy, mission & vision, product portfolio analysis and SWOT analysis. Additionally, there is a complete analysis of the Electrical and Engineering services industry, where the specification, market size, trend, growth and performance of the industry are portrayed. The third chapter of the study describes the activities and process of the supply chain of the organizations. Then fourth chapter of this study focuses on the ERP implementation and integration at RISL including purposes, features, advantages and disadvantages of ERP.

The fifth chapter consists of Rancon Industrial Solutions Limited's sourcing and procurement procedures. This chapter describes how RISL acquires equipment and components from suppliers, as well as the entire purchase procurement process. Then next chapter is about the inventory and warehouse management. The goal of this section is to learn about how the company manages its inventory.

Finally, in the last part my overall internship experience is illustrated with the key responsibilities I have been assigned during internship period, the trainings I acquired, the skills I applied and developed. The key findings of this report are to provide a

detailed overview of the supply chain and the integration of ERP with business processes.

Table of Content

Chapter 1: Introduction

1.1. Introduction

Internship is an ultimate graduation requirement. It provides an excellent opportunity for every student to gain valuable and innovative insights into the practical sector. Making an Internship Report is also a tough job that improves one's intellectual abilities as a skilled graduate. I was assigned to an internship at Rancon Industrial Solutions Ltd for three months as part of the requirements for completing the BBA degree. I aimed and decided to focus my internship report on the implementation and integration of ERP in supply chain.

As a final year student, after completing all the academic credits a student needs to do an internship program for the purpose of getting practical knowledge or corporate knowledge and to utilize the subjective knowledge that one learnt from academic session. An internship report should be written once the internship is completed, based on the knowledge gained during the internship.

In these 3 months of internship period, I was working under Rancon Industrial Solutions Limited's Supply Chain and operating, assisting in supply chain operations through ERP. It was a great experience that helps me to utilize my academic knowledge in Practical field and get an essence of corporate world. At Rancon Industrial Solutions Limited, I finished my internship program. I completed my study on the how an organization manages their supply chain by using ERP.

In this report, I've included an industry analysis, company/organization's analysis, supply chain with the use of ERP of an organization, an internship experience, some significant recommendations, and finally, a conclusion and references.

In this internship report titled **"Driving Operational Excellence in Supply Chain through ERP Implementation at Rancon Industrial Solutions Ltd"** for the requirement of the fulfillment of the BBA program at United International University under the direction of my honorable intern supervisor Dr. Saad Hasan, PhD, Associate Professor at UIU Business School.

1.2. Purpose of the Report

This report is written as part of the internship program on the suggested topic **"Driving Operational Excellence in Supply Chain through ERP Implementation at Rancon Industrial Solutions Ltd".**

In Bachelor of Business Administration of United International University, there are 3 credits for internship or project excluding the academic courses in order to complete the bachelor's degree. For completing my degree requirements, I joined Rancon Industrial Solutions Ltd for internship of 3 months.

1.3. Background of the Report

In this world when every organization is striving for sustainability and responsible business practices, efficient supply chain management plays a pivotal role. Rancon Industrial Solutions Ltd is known by the group name RANCON and belongs to the Electrical and Engineering Services industry. There are many other business units or concerns are operating under the RANCON group of company.

Here in Bangladesh, alongside farming, textile industries, and electronics manufacturing industries, the electrical and engineering services industry is one of the most crucial players and contributing massively to the economy. Being one of the most competitive industries involving crucial supply chain functions, the major players of the industry are now facing cut throat competition among themselves with potential market demand.

The report involved the impactful and important role of ERP in the daily supply chain operations of an electrical and engineering services providing company which provide industrial solutions to other businesses. Not only Supply Chain plays a significant role in the growth of a company, but also using an effective, efficient, error free, management tool like ERP. This report focuses on the supply chain operations of Rancon Industrial Solutions Ltd with the effective use of ERP to ensure maximum efficiency in the supply chain.

1.4. Objectives of the Report

The objective of the report can be classified into 2 sections. Those are the Primary objectives and Secondary objectives. All of those objectives are discussed below:

Primary Objectives

As I discussed earlier the primary objective of this report is to complete my academic requirement of submitting internship report. So, for that purpose I am preparing this report which includes these following primary objectives:

- General goal is to learn about a company's operational activities of supply chain as well as Rancon Industrial Solutions Limited’s supply chain.
- Gaining hands-on experience with job duties.
- Getting to know oneself with the actual corporate work environment.
- Integrating the academic lessons with real-world situations.
- Fulfilling the prerequisites for the BBA program.

Secondary Objectives

The secondary objectives are to let people know about the supply chain functions and strategies. Analyze the supply chain of Rancon Industrial Solutions Ltd including the

proper implementation of ERP in the supply chain operations. The secondary objectives are mentioned below:

- To learn how to manage Inventory by a company.
- To learn how a company procures different types of services and products from various vendors and supplies.
- To understand overall operational activities of supply chain of the company.
- To gain practical knowledge of the workplace and acquire skills in areas such as warehouse management, inventory management, procurement or sourcing etc.

1.5. Methodology

The study is carried out in a planned manner, beginning with the topic selection and concluding with the creation of the final report. Data discovery and gathering the essential data were important stages. The study has conducted based on the observations, practical works, routine tasks etc.

Sources of Data

Two types of data sources have been used to collect the data in order to prepare this report. They are primary data and secondary data.

Primary Data

This research or study was developed with considerable use of original data. It is gathered from the employees associated with this organization. The data was gathered through personal conversations, training sessions. The officers of supply chain and IT of Rancon Industrial Solutions Limited were questioned with open ended questions about the practical use of ERP regarding the supply chain operations. They also provided information for the report, which is written accordingly.

Secondary Data

In addition to main data, secondary data were collected to learn about the company's history, background, supply chain network and implemented ERP. Secondary data were collected from the company's website, ERP provider's website and company's ERP.

1.6. Scope and Limitations of the Report

Scope of the Report

I have gained extensive practical knowledge of the supply chain of a manufacturing company and implementing that valuable knowledge in everyday operations through ERP. Additionally, I have the opportunity to work outside of my department's supply chain. It broadens my understanding in the real world so I may include it in my experience. Most significantly, through collaborating with individuals from many departments, I was able to build a network that may be useful to me in the near future. I was able to put my supply chain major academic knowledge into practice while working at Rancon Industrial Solutions Ltd regarding supply chain planning and forming strategy. I am able to explain how things actually operate in daily operations by a supply chain department of a company such a from having a work order to satisfying the need of end consumer. Finally, managing the whole supply chain with the proper integration of ERP software.

Limitation of the study

I would like to admit that I got full support and cooperation from all the employees, stakeholders and officials of Rancon Industrial Solutions Ltd. But in spite of that there were some limitations as well that I faced to do this internship and write the report.

1. As I worked with all the busy people. Due to their hectic schedules, staff were unable to allocate much time for me. So, it was tough for me to manage them to collect data for my report from their busy schedule.
2. Organizational constraints made detailed action research/study impossible.
3. Due to a lack of past research on this topic, there are few available records or sources of data in this area.
4. There is many information that are confidential for Rancon Industrial Solutions Ltd. So, the management couldn't share that information for company's well-being.
5. While collecting secondary data, I didn't get all the information that I was needed form their websites, ERP as it is not fully functional yet and many other modules as well.
6. The report was prepared from an individual's perspective. As a result, not all of the findings are necessarily objective, might be subjective (may vary person to person).

Despite some limitations, I have tried to prepare a comprehensive report based on available resources gathered during my internship.

Chapter 2: Company and Industry Profile

2.1. Company Analysis: Overview of Rancon Industrial Solutions Ltd

Rancon Industrial Solutions Limited, a concern of RANCON Group. Rancon is a leading conglomerate in Bangladesh, spanning diverse industries such as automobile, motorbikes, seafood, lubricants, electronics, manufacturing, interior design, electrical and engineering, pharmaceuticals etc. The group started its journey with the sole distributorship rights for Mitsubishi Motors in 1979. The journey of Rancon began with RANGS Limited back in 1979 but Rancon was officially formed in 2005 by Romo Rouf Chowdhury. Today, the group has diversified into numerous sectors and operates more than 32 subsidiary business units or companies. The group's diversified businesses were established at various times.

Figure 1: Brands

Rancon Industrial Solutions Limited is one of the leading HVAC, Elevator and Display service and solution providers in Bangladesh. Rancon Industrial Solutions Limited was established under the umbrella of Rancon Holdings Division back in 2015. It is a private limited company and the shares are divided among the directors (Group Managing Director, Executive directors and Divisional Directors). There are three strategic business units or concerns run under the **Rancon Holdings Division** such as Rancon Industrial Solutions Ltd, Rancon Industries Ltd and RANGS eMART. RISL works with the globally recognized brands like Samsung, Daikin, LG, Dunham-Bush, ThyssenKrupp, Mitsubishi, Kohler and Fuji. It has experienced with over 300 projects all over Bangladesh, RANCON Industrial Solutions Limited is dedicated in providing top quality support to the client.

Rancon Industrial Solutions implemented an ERP (ERPonTheNet) system back in 2024 to automate the processes of Supply Chain and few other departments.

Rancon Industrial Solutions Ltd belongs to the **Electrical and Engineering Services** industry. The industry consists of few players but the competition is really high although. It specifically operates as a service and solution provider for HVAC Systems, Vertical Transportation, Digital Displays, Industrial Infrastructures etc.

2.2. Mission and Vision of Rancon Industrial Solutions Limited

Mission

Rancon Industrial Solutions Limited’s mission is to provide top quality HVAC system, elevator and digital display solutions in Bangladesh by ensuring customer satisfaction and maintaining international standards like ISO 9001:2015. The company emphasizes towards service excellence to ensure customer satisfaction by delivering reliable, high-quality support and products.

Vision

The company's vision is to be a leading provider of advanced, energy efficient and reliable air conditioning and vertical transportation solutions which ensure comfort, safety and productivity as well.

Core Values of Rancon Industrial Solutions Limited

The values which possess by the Rancon group and its other business units like Rancon Industrial Solutions Limited. The values are mentioned below:

I. **Passion to Excel**
   The organization always motivates and welcome the passionate individuals.

II. **Leadership**
   Company ensures the environment to generate future leaders with entrepreneurial skills.

III. **Think out of the Box**
   Company and the surrounding help employees to think in a different way.

IV. **Keep Learning**
   The company has a precious culture of learning and implement new ideas by the employees.

V. **Have Mutual Respect**
   Company always tries to establish an environment where everyone of the company is treated equally and having mutual respect to each other.

VI. **Have Fun and Be Healthy**
   The company always thinks about mental health of the employees.

2.3. Core Business Operations

Rancon Industrial Solutions Ltd (RISL) is a key subsidiary of the **Rancon Group** (a leading conglomerate in Bangladesh). It is a specialized engineering and infrastructure service provider and manufacturer as well.

Their core business operations include the following major areas such as:

1. HVAC Systems

HVAC System refers to the **Heating, Ventilation, and Air Conditioning.** Providing HVAC system is their flagship operation. They provide end-to-end HVAC solutions, specializing in **VRF (Variable Refrigerant Flow)** technology and industrial chillers.

- **Services:** Design, supply, installation, and modification.
- **Brands:** They represent global brands such as **Samsung, Daikin, LG, and Dunham-Bush**.

They have completed over 220 projects across various sectors, including residential, industrial, and government projects all over the country.

2. Vertical Transportation

Vertical transportation refers to the system used to move people and goods from one level to another level of the building. RISL provides solutions for moving people and goods within buildings. They provide passenger lifts and cargo lifts as well.

- **Products:** Elevators (Lifts) and Escalators.
- **Brands:** They partner with international manufacturers like **Mitsubishi, ThyssenKrupp, Kohler, and Fuji**.

3. Digital Display Solutions

Digital display solutions are the integration of hardware and software systems to show contents like advertisements, videos, static/dynamic images. Rancon Industrial Solutions Ltd is also fulfill the need to the growing demand for modern visual communication.

- **Products:** Large-scale indoor and outdoor LED displays, and multimedia content delivery systems.

4. Industrial Infrastructure

Industrial infrastructure refers to the physical and organizational structures to create an environment for large scale business operations. Rancon Industrial Solutions Ltd also handles technical environments that require precise atmospheric control.

- **Clean Rooms:** Designing environments with controlled pollutants for pharmaceutical or high-tech manufacturing.
- **Cold Storage:** Providing high-density insulation solutions and energy-efficient cooling for the food and logistics industries.

5. Service and Maintenance

Providing service after the installation of technology is a major part of their business model. It includes any type of repairing and servicing after successful sales. If the service is claimed within the warranty period, then the service charge is free of cost but if service warranty period is over then it requires a service charge.

- **Annual Maintenance Contracts:** Providing routine servicing (typically 3 times a year) to ensure equipment longevity.
- **Technical Support:** Operating dedicated service centers and technician teams for emergency repairs.

2.3. Organizational Hierarchy

The organizational hierarchy of Rancon Industrial Solutions Limited (RISL) follows a structured corporate model common to the Rancon Group (a subsidiary of Rancon Holdings Division). It is built on a pyramid structure that connects the company's executive directors to its specialized technical teams.

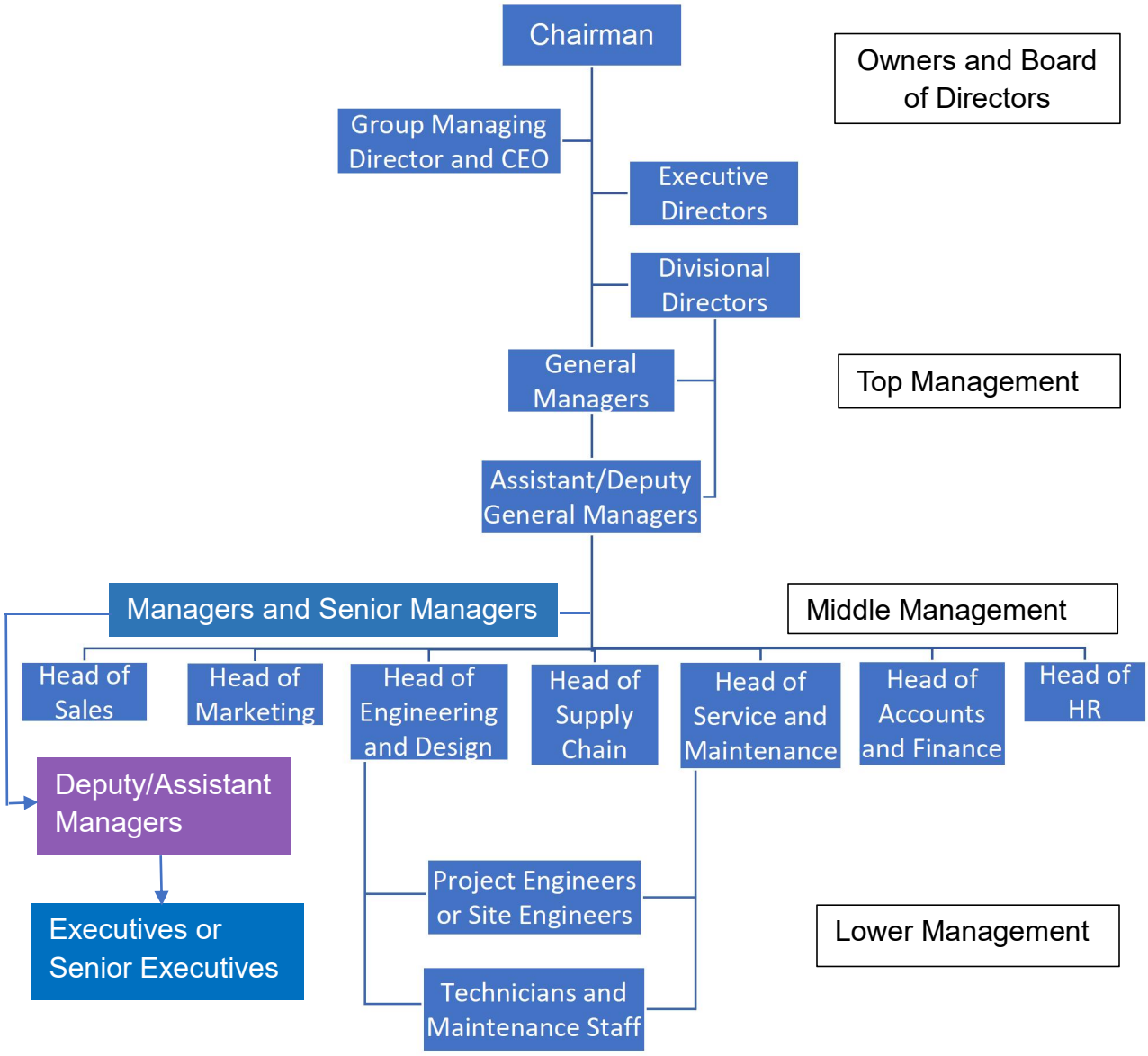

Figure 2: Hierarchy of Rancon Industrial Solutions Ltd.

The hierarchy of the organization is classified into multiple levels. Describing the organizational hierarchy with the specific job roles of each position below:

1. Group Executive Level (The Parent Hierarchy)

As Rancon Industrial Solutions Limited is a business unit or concern of the larger Rancon conglomerate, its top decisions are guided by the group's CEO and executive directors.

- **Chairman:** Abdur Rouf Chowdhury (Founder of the group).
- **Group Managing Director and CEO:** Romo Rouf Chowdhury (Leads the strategic directions of all Rancon concerns).
- **Executive Directors:** Each executive director is assigned for multiple business units and divisions.

2. Strategic Business Unit (SBU)

At the company-specific level, Rancon Industrial Solutions Limited operates under a **Divisional Director** who oversees the whole "Industrial Solutions" division. Here, the divisional leadership is seen.

- **Divisional Directors:** Typically oversee a cluster of related businesses (Engineering, Infrastructure, and Industrial Solutions).
- **General Manager (GM):** Responsible for the day-to-day operations specifically for RISL, including sales targets, supply chain management, and partnership maintenance.

3. Departmental Level (Middle Management)

The business unit (Rancon Industrial Solutions Limited) is divided into functional departments. Each department (function) is led by a **Manager** or **Senior Manager**. Basically, the managers are known as the head (functional Heads) of the department.

- **Sales:** Manages client relationships and project bidding.
- **Marketing:** Connects other businesses by promoting own products, services and solutions.
- **Engineering & Design:** Focuses on technical blueprints or designs for HVAC, elevators and installation factors.
- **Supply Chain & Procurement:** Handles the import of goods from global partners, sources the local materials, manages logistics and inventories etc.
- **Service & Maintenance:** Manages the post-installation services and Annual Maintenance Contracts.
- **Accounts & Finance:** Manages company's financial records.
- **HR:** Supports administrative activities related to employees, employers and potential candidates.

4. Operational & Technical Level

This is where the core engineering work happens. Here, the whole execution and ground level works are done.

- **Assistant Managers:** Supervise specific project sites or service teams.
- **Executives and Senior Executives:** Contribute to the departmental tasks and assist the line managers.
- **Project Engineers or Site Engineers:** Lead the installation and technical equipment of HVAC and elevator systems at the project site.
- **Technicians & Maintenance Staff:** The "on-the-ground" workforce responsible for physical installation, troubleshooting, and routine servicing.

2.4. SWOT Analysis of Rancon Industrial Solutions Ltd

A SWOT analysis for Rancon Industrial Solutions Ltd (RISL) in the context of the 2026 Bangladeshi industrial market portrays its position as a premium electrical engineering service provider backed by a massive conglomerate.

SWOT Analysis of Rancon Industrial Solutions Ltd.

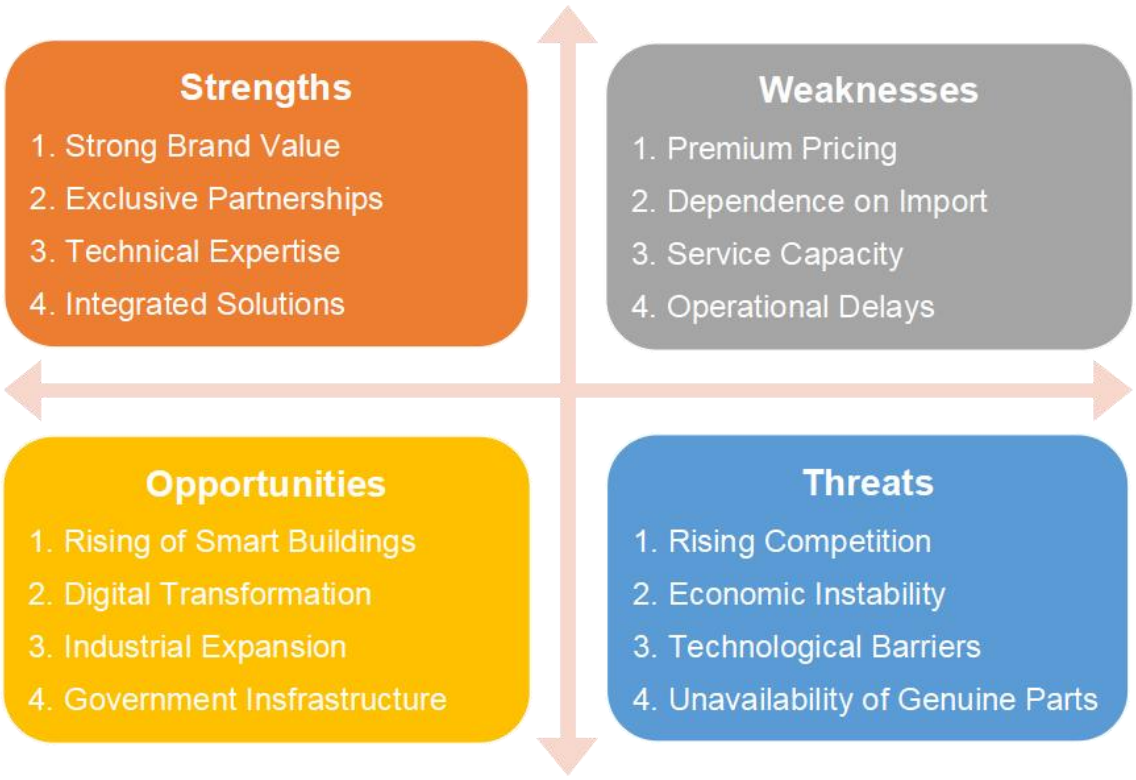

Figure 3: SWOT Analysis Results

Strengths

- **Strong Brand Value:** Being a part of the Rancon Group provides trust in the B2B sector and ensures high financial stability as well.

- **Exclusive Partnerships:** Sole/Major distributorship and import rights for world-class brands like Dunham-Bush, Samsung (VRF), and ThyssenKrupp.
- **Technical Expertise:** A track record of over 300+ projects, including specialized commercial and private projects.
- **Integrated Solutions:** Ability to offer a "one-stop" package/solution (HVAC + Elevators + Displays) for new commercial buildings of probable projects.

Weaknesses

- **Premium Pricing:** Depending on top-tier global brands (Samsung, Daikin, LG) often makes the project budget more expensive than local competitors.
- **Dependence on Imports:** High vulnerability to global supply chain disruptions and fluctuations in the USD-BDT exchange rate.
- **Service Capacity:** Maintaining high-quality after-sales service (AMC) across all 64 districts can be logistically challenging.
- **Operational Delays:** As a part of a large conglomerate, processes (Procurement, QC, etc.) can sometimes be slower than smaller firms including decision making.

Opportunities

- **Rising of Smart Building:** The rise of "Modern Buildings" in metropolitan cities like Dhaka and Chittagong increases demand for energy-efficient VRF and HVAC.
- **Digital Transformation:** Most of the firms demand for HVAC and Elevator systems from service providing firms for smart and easy maintenance.
- **Industrial Expansion:** Expansion into the pharmaceutical and food-processing sectors, which require strict Clean Room/Cold Storage.
- **Government Infrastructure:** Increased participation in massive government tenders (Airports, Hi-Tech Parks, and Metrorail)

Threats

- **Rising Competition:** Growing market share of aggressive local players like Walton and international firms (Hyundai) entering directly in the industry as well.

- **Economic Instability:** Inflation and potential industrial slowdowns may lead to the deferral of large-scale infrastructure projects.
- **Technological Barriers:** Rapid changes in cooling technology or energy regulations may require frequent, costly staff re-training which is time consuming.
- **Unavailability of Genuine Parts:** The unavailability of authentic or genuine spare parts in the local market can hurt the authorized service reputation of the company.

Rancon Industrial Solutions Limited's primary strategy is to maintain its **"Premium Quality"** positioning to sustain in the industry for a long time. Being a part of a group of companies, they have a potential market that guarantees a steady stream of high-end projects due to their brand value and quality of work. However, to remain competitive in the recent times, they are increasingly focusing on **localized technical support** to chase the high costs of their imported hardware. They are trying to move toward a "Strategic Stock" model for critical spare parts to ensure that service is never delayed by 3-month shipping lead times. RISL has capability to convert the possible threats into the opportunities and they are capable enough to absorb the opportunities as strengths.

For Rancon Industrial Solutions Ltd (RISL) to maintain its market-leading position through 2026 and beyond, an **Enterprise Resource Planning (ERP)** system is no longer just an option, it has become a survival necessity. So, they have already implemented the ERP system

In an industry where margins are tight and project timelines are complex, an ERP transforms the company from a reactive service provider to a proactive, data-driven engineering firm.

2.5. Industry Analysis: Overview of the Electrical and Engineering Services Industry

Specification of the Electrical and Engineering Services Industry

The Electrical and Engineering Services Industry involves the design, development, installation, testing, and maintenance of electrical systems and equipment. It provides technical expertise for power generation, industrial automation, building infrastructure, and renewable energy, with a growing focus on smart technology. This is a mainly service based industry. This industry helps to ensure automation using technology and electronic equipment. In most of the cases, firms under the industry provide B2B (Business to Business) service. This is a very competitive industry because of the high project values or budgets. Establishing a company in this industry requires huge capital and financial support as well. Though the risk is high due to massive investments but the industry has good potentials to grow and earn profits.

Core activities of the industry involve electrical design & layout, consultation, installation, execution, and maintenance.

This industry involves with the following technologies:

- **HVAC System:** Heating, Ventilation, and Air Conditioning technology.
- **VRF System:** Variable Refrigerant Flow technology and industrial chillers.
- **Vertical Transportation:** Elevators (Lifts) and Escalators
- **Digital Display:** Indoor and outdoor LED displays, and multimedia content delivery systems.
- **Photovoltaic (PV) Technology:** Solar Panel
- **Industrial Infrastructure:** Clean Rooms Cold Storage.

Moreover, this industry parallelly connected with the **Service and Maintenance** facilities for the provided technology or solutions.

The Electrical Engineering Services Market is going towards its potential growth driven by technological advancements and a shift towards sustainable solutions. The Electrical

Engineering Services Market is currently experiencing a dynamic evolution, driven by advancements in technology and increasing demand for sustainable solutions. As industries strive for efficiency and innovation, the role of electrical engineering services becomes increasingly essential. Companies are integrating smart technologies and automation into their operations, which requires specialized engineering works.

Life Cycle of the Electrical and Engineering Services Industry

A typical Industry Life Cycle represents the different stages an industry experiences from its birth to its eventual declining. In 2026, this cycle is moving faster than ever due to rapid technological disruptions.

The cycle is generally divided into **five** distinct phases:

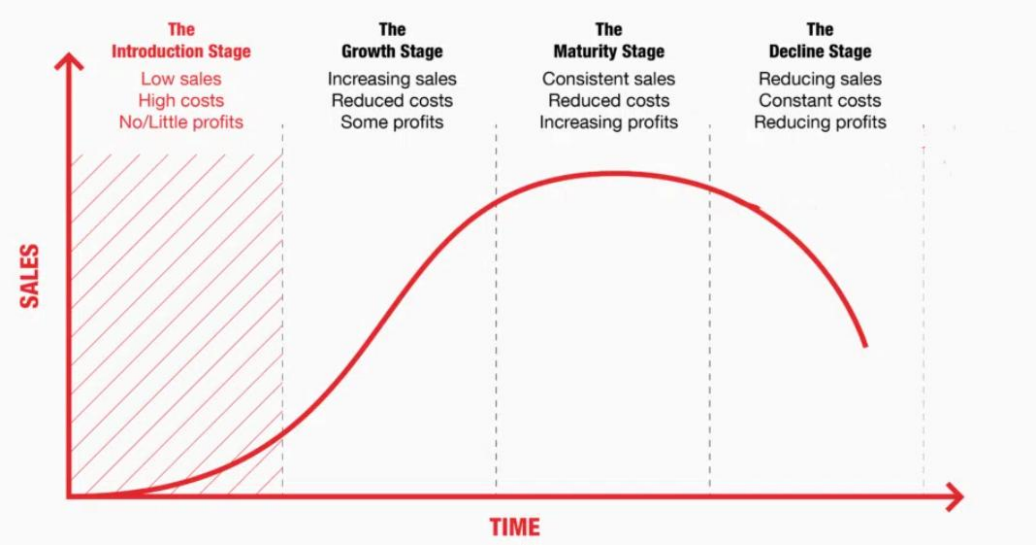

Figure: 4 A Typical Life Cycle of an Industry

1. Introduction Stage: This is the birth of a new industry, often triggered by a technological breakthrough or a new consumer need.

2. Growth Stage: Once the market accepts the product, sales accelerate rapidly.

3. Shake-out Stage: As the growth rate begins to slow, the industry enters a "survival of the fittest" period.

4. Maturity Stage: The industry reaches its peak. Most potential customers are already using the product.

5. Decline Stage: The final phase occurs when the industry loses relevance due to obsolescence or superior substitutes.

The **Electrical and Engineering Services** industry has itself reached the maturity stage of its life cycle. For a majority of the operating industries, there is the decline phase as well, which applies negligibly for the electrical and engineering services industry because even though the players of this industry including Rancon Industrial Solutions Ltd. can be knocked out of the competition, though the industry itself will be existing for the foreseeable future.

Global Market Size, Growth and Trend of the Electrical and Engineering Services Industry

Growing demand for automation and technology is likely to drive the growth of the global market of Electrical and Engineering Services. Nowadays, almost all systems use automation to solve complex problems and accelerate the design process. It helps humans enhance their productivity and improve quality. Therefore, these systems are preferred over traditional systems.

According to ZION Market Research, the global electrical engineering services market size was worth around **USD 291.64 Billion** in 2024 and is predicted to grow to around **USD 412.18 Billion** by 2034 with a compound annual growth rate **(CAGR)** of roughly **3.52%** between 2025 and 2034.

North America is expected to dominate the electrical engineering services market over the forecast period.

The global electrical engineering services market is dominated by players like: Siemens, General Electric, Daikin, Mitsubishi, Bosch, LG, Samsung, Gree, Schneider Electric,

ABB Limited, Eaton, Honeywell, Rockwell Automation, Mitsubishi Electric, Emerson Electric.

Overview of the Electrical and Engineering Services Industry in Bangladesh

The hearing aid industry is becoming a vital and essential sector of the modern development and construction system. It has become a crucial part of the modern businesses. This **Electrical and Engineering (E&E) and Services Industry** in Bangladesh has evolved into a high-value industry worth approximately **BDT 45,000 crores to 55,000 crores ($3.8 to $4.6 billion USD** which is driven by massive infrastructure modernization and a shift toward a "Smart Bangladesh." This valuation combines the markets for HVAC systems, vertical transportation (lifts/escalators), digital displays, industrial solutions. general electrical engineering services and maintenance. The industry is currently experiencing a high demand phase due to the goal of smart city projects, commercial high-rise constructions and industrialization. In 2026, the **Electrical and Engineering (E&E) Service Industry** in Bangladesh, specifically covering HVAC, VRF, and Vertical Transportation has shifted from a luxury focused niche into a critical infrastructure utility sector. Most of the modern corporation or medium to big businesses dependent on this industry or solutions provider and RISL is one of those service providers.

The Electrical and Engineering (E&E) and Services Industry is in the **Maturity** stage in Bangladesh. There are no manufacturers to produce high tech products or machineries for this industry in Bangladesh. The industry in Bangladesh is fully dependent on imports regarding the providing solutions. Import is the solution to have the technology in order to provide service to the clients. Though small or medium necessity items like rods, cables, copper pipes, upvc pipes, GP sheet, PE Foam etc. are locally sourced by the firms for installation and service purpose. The main international brands in Bangladesh are Samsung, Daikin, LG, Midea, Hisense, Mitsubishi, Fuji, Kohler etc. Without these companies, there are only a few numbers of companies like Pran-RFL, Walton are moving own manufacturing plants to provide industrial solutions with own

fabricated products like air conditioners, elevators and lifts. Beside these firms there are many local firms provide only maintenance.

Industry Size, Growth and Trends

In 2026, the Electrical and Engineering (E&E) services industry in Bangladesh is at a historic peak, transitioning from a basic electric solution to tech-integrated solutions market.

The industry is currently valued at approximately BDT 450 to 550 billion or **BDT 45,000 crores to 55,000 crores ($3.8 to $4.6 billion USD**. Moreover, this industry expected to have compound annual growth rate (CAGR) of minimum 10% to 12% maximum in the recent upcoming years.

By 2026, the **Electrical and Engineering (E&E)** services industry in Bangladesh has moved past simple hardware sales. The market is now defined by **intelligence, sustainability, modern technology, and connectivity**.

Some Trends Related to the Industry of Bangladesh Market

The Green Transition

Bangladesh now leads the world in **LEED-certified green factories** (over 270 certified facilities by early 2026). This has shifted engineering requirements from "functional" to "ultra-efficient." Standard motors are being replaced by Ultra-Premium Efficiency class motors in industrial fans and pumps. The HVAC industry is rapidly moving toward refrigerants like **R-32** to meet international carbon-reduction mandates. Engineering services now almost always include the integration of rooftop solar with the building's main electrical grid to reduce utility costs.

AI-Driven Maintenance

The most significant operational trend in 2026 is moving from reactive to predictive maintenance using AI and IoT. Lifts are installed with sensors that monitor door cycles,

leveling accuracy, and motor temperature. AI algorithms predict a failure before it occurs, allowing technicians to fix it during off-hours. Centralized HVAC systems are connected to the cloud system, allowing engineers to know about the pressure leaks or sensor errors before occurring an accident. For firms like RISL, this trend turns "Maintenance" into a high-margin service product.

Vertical Transportation Evolution

As Dhaka's skyline pushes higher, the technology within the elevator shafts has changed fundamentally. Modern lifts in 2026 use regenerative technology to capture energy which helps to save up to **30% in electricity**. Now gesture-based and mobile-app-controlled elevators have become standard in premium commercial building in Dhaka and Chittagong. Demand has increased for lifts exceeding **4.0 m/s** to serve the new constructions of 30+ storeyed buildings.

Digital Displays as Experience Infrastructure

Digital displays are no longer just "electronic posters". It is now part of the building's decoration, guiding and promotional material. Large-scale LED displays in malls and metro stations now provide real-time transit updates and current affairs update.

Key Competitors and Market Dynamics

In 2026, the Electrical and Engineering services market in Bangladesh is characterized by high competition between premium global brand partners and aggressive local manufacturers. The industry is currently shaped by moving towards import technology from the renowned brands of various countries to adapt and implement AI.

The competition is separated into three distinct strategic groups based on their technical depth and targeted clients.

Category 1: Premium Solution Providers

These firms handle high-complexity projects like high-rise VRF, clean rooms, and data centers. There are many firms are competing with each other under this category. Mentioning some of the competitors of Rancon Industrial Solutions Ltd below:

- **Rancon Industrial Solutions Ltd (RISL):** Market leader in HVAC, VRF and Premium Lifts though there are some other key players who are giving tough competition to RISL in HVAC and Lift segments separately. They provide service through and ensure brands like: Samsung, Daikin, Dunham-Bush, and Fuji, Kohler.
- **Transcom Electronics Limited:** They provide Variable Refrigerant Flow (VRF) and HVAC systems in Bangladesh. They are one of major players in the HVAC market, offering sales, design, installation, and after-sales service for advanced VRF systems and competing with RISL closely. They also partnering with the worldclass brands like LG, Midea, Samsung etc.
- **Tritech Building Services Ltd:** A pioneer in VRF technology in Bangladesh. They are a major competitor for RISL, representing brands like LG and Midea.
- **Kaltimex Energy Bangladesh**: A leading supplier for industrial heating, ventilation, and air conditioning, focusing on energy-efficient solutions for factories and power plants. They are known for industrial specialization.
- **Energypac Engineering:** They dominate in the substation and transformer market, but competing with RISL on large-scale industrial electrical infrastructure. They are known as end-to-end engineering solutions provider.
- **Property Development Ltd:** Property Development Limited (PDL), a sister concern of PRAN-RFL Group, specializes in supplying, installing, and servicing both lift systems and Variable Refrigerant Flow (VRF) HVAC systems. They provide comprehensive HVAC solutions, including chillers. A specialized rival in the vertical transportation and HVAC space.
- **Aziz Trade & Engineering Ltd.:** A major player in the HVAC installation market, operating since 2003. Master dealer of Hitachi.

Category 2: The Local Manufacturer

In Bangladesh, there are only two firms In Bangladesh have showed the courage to take the initiative to manufacture high end technology under their own supervision. Although they import many major and critical parts for their manufacturing processes. They are Walton and PRAN-RFL, both are seriously competing with RISL in the same industry with same target market.

- **Walton:** The most significant threat to the volume market. They compete with RISL in the market neck to neck. They have successfully localized the manufacturing of ACs and elevators, offering price points 15-25% lower than imported premium brands. Walton has invested over **Tk 300 crore (3 billion)** in the infrastructure, which features advanced, high-precision, and automated machinery. This facility is designed to manufacture European-standard elevators locally to reduce import dependency with an annual production capacity of 1,500 units.
- **PRAN-RFL:** PRAN-RFL Group has established a significant, high-tech manufacturing plant for lifts in Bangladesh under the brand name **Property Lifts**. The facility, located at the Danga Industrial Park in Narsingdi. It is involved with an investment of approximately **Tk 200 crore** and with the aim to reduce the dependency of imported elevators. It has a capacity to produce 1200 lift per year They are known for high-end elevator installation services as well.

Category 3: Direct Presence of Multinational Brands

There are some multinational electronic brands who are operating their business in our country by managing their own factories, offices directly. There are only a few names in the list. Companies under this category compete with RISL in the Lift/Elevator market only.

- **Schindler:** This brand's country of origin is Switzerland. It Known for high-performance and reliable elevator solutions.

- **Otis Elevator Company:** This is US based company. A global leader operating in Bangladesh, often in partnership with **AG Industrial Solutions (Anwar Group)**.

Since, all the major components and technology of HVAC, VRF and Digital Display are imported, the main source of competition is mainly the service rather than the companies based in the Bangladeshi market. The dealers and distributors can influence their customers by product cost, warranty terms, and after-sales service support. The market is dominated by companies that provide extended warranty periods, free maintenance throughout the warranty, and good quality communication at the end of the day.

In the recent days, the market dynamics for the **Electrical and Engineering (E&E) services** industry in Bangladesh are defined by a high-tech transition. The country is moving to achieve the status of a developed country. The industry is now concern about environment and high-efficiency. In 2026, the Electrical and Engineering (E&E) services industry in Bangladesh has become a primary sector of necessity for the nation's infrastructure and urbanization.

Dhaka and Chittagong have started to construct 20+ storeyed residential and commercial towers. This has turned High-Speed Lifts and VRF (Variable Refrigerant Flow), HVAC systems from luxury items into mandatory building utilities. This creates a massive demand for efficiency motors and low GWP (Global Warming Potential) HVAC systems. The operationalization of mega-zones like Mirsarai has shifted demand toward heavy industrial infrastructure like large-scale substations, industrial chillers, and automated assembly line monitoring.

Local giants like Walton have localized manufacturing for ACs and Elevators, allowing them to offer price points 15-25% lower than imported premium brands. They currently dominate the high-volume residential market.

Since high-tech components (compressors, microchips, high-speed motors) are still largely imported, the USD-BDT exchange rate remains the single biggest risk to profit margins due to our economic condition. There is a critical shortage of skilled engineers those who understand both heavy electrical systems and the software/AI required for modern building and infrastructure management.

Regulatory Environment

A regulatory environment is the framework of laws, rules, and regulations that instruct how businesses operate within a specific industry. It aims to ensure economic stability, protect consumers, and promote fair competition by setting standards for safety, financial, and ethical practices.

It consists of government laws, policies, guidelines, and regulatory bodies that supervise industry activities. The regulatory environment for the Electrical and Engineering Services industry includes ethical practices, fair competition, public health, and energy efficient.

Bangladesh National Building Code (BNBC) and **Bangladesh Standards and Testing Institution** (**BSTI)** have developed rules and regulations for the electrical and engineering services industry in Bangladesh and those must be followed by the firms of the industry while operating a project or manufacturing and operations (Import, LC).

Following the rules and regulations, the importers and distributors of the industry must collect import licenses and safety certifications from the authority and adhere to the customs clearance process.

According to the Customs Act 1969 and the import-export policies of Bangladesh, importers must keep up-to-date trade licenses, VAT registration, and necessary papers, such as Letter of Credit (LC) papers, for customs clearance.

The **Sustainable and Renewable Energy Development Authority (SREDA)** and **Bangladesh Standards and Testing Institution** (**BSTI)** are the primary regulators of equipment efficiency in 2026. All imported and locally assembled HVAC units and electric motors must contain a BSTI rating. For industrial projects in Special Economic Zones and Manufacturing plants, the use of Ultra-Premium Efficiency motors is now often a prerequisite for obtaining utility connections to reduce energy loss. Moreover, the industry has standardized on **R-32** refrigerant (mildly flammable but eco-friendly).

To ensure product safety and quality, imported components or locally manufactured products must meet the International Organization for Standardization (ISO) certification. It is increasingly required for government tenders (like Metro Rail or Hi-Tech Parks).

Value-added tax (VAT) and import tariffs apply to the cost and taxation of imported electrical items.

There are no specific regulations from the responsible authority for pricing the items that are used for HVAC, VRF, Chillers. For that reason, the importers can provide quotation of price to their clients based on the market competition and import related costs.

Challenges in the Industry

Though the Electrical and Engineering Services industry has reached to the Maturity stage in Bangladesh but there are some challenges for both service providers and customers. Having a high demand due to urbanization, the operational environment has become increasingly difficult. Several critical challenges threaten the profitability and operational stability.

The challenges of the industry are mentioned below-

I. **Lack of Local Manufacturing:** There are no HVAC, VRF, Chillers, Digital Display, Lift (few) manufacturers in Bangladesh. So, all the major electrical components and devices are imported from another country, like the USA,

Singapore, India or China. That's why import cost, and freight cost increase the product cost.

II. **Currency Volatility & LC Issues:** Although dollar liquidity has stabilized compared to 2024, the Taka's depreciation against the USD continues to inflate the "Landed Cost" of high-end equipment. This makes fixed-price long-term contracts (common in construction) highly risky.

III. **High Costs and Affordability Issues:** Generally, small and medium businesses cannot afford most of the products and brands due to high prices. The product price is high because of quality of the product and brand value as well. Moreover, firms have a tendency to charge a premium amount for their installation and maintenance services.

IV. **After Sales Service and Technical Expertise:** In this sector, there is a shortage of qualified technicians, and almost all service centers and labs are Dhaka city centric. It is challenging for those who have offices and factories outside Dhaka to maintain or repair their devices.

V. **Shortage of Talents:** There is a skill gap in the industry among the technicians. Modern systems require "Mechatronics" experts who understand both heavy machineries and AI-driven software logic. Unfortunately, most current vocational graduates are only trained in traditional repair.

VI. **Compliance Burdens:** Bangladesh National Building Code (BNBC) mandates for fire-electrical interlocking system. Installing old model elevators and HVAC systems in the building to meet these standards is a massive challenge, low-margin crisis for service firms

The challenges have to be overcome by taking and implementing useful initiatives.

Chapter 3: Supply Chain of Rancon Industrial Solutions Ltd.

3.1. Introduction

Rancon Industrial Solutions Limited belongs to one of the largest conglomerate businesses. It is one of core concerns of Rancon group. This strategic business unit is operated in a planned and systematic way with the collaboration of all departments such as Sales, Marketing, Design, Supply Chain, Accounts and Finance. As Rancon Industrial Solutions Ltd (RISL) operates a sophisticated and complex business model, so they are following ERP integrated and automated supply chain in Bangladesh. Moreover, being a leading partner for global brands like Samsung, Daikin, LG, Mitsubishi, Kohler, ThyssenKrupp, Fuji and Ostec etc. their process is a mix of international procurement.

Supply chain is one of the core functional departments of this business unit. It helps to reach the end point (consumer need) from the origin point (supplier/manufacturer) by facilitating the whole procedure of specific projects.

Based on the expertise of the company, Rancon Industrial Solutions Limited primarily operates the business and its supply chain as direct solutions provider rather than a third-party outsourcing firm. They emphasize on the solution by handling everything from the procurement and design to installation and maintenance using their own workforce. Each supply chain process involves multiple essential activities. The supply chain processes of Rancon Industrial Solutions Limited involve the implemented ERP system which are-

- **International Procurement:** Direct sourcing from partner global brands which refers to importing the high tech and quality equipment and products from foreign brands through Letter of Credit (LC)
- **Local Sourcing:** Cost efficient and easily available components or goods are collected from local sources or suppliers.
- **Project Management:** Managing and fulfilling work orders of clients with internal project leads and engineers. The ground level project execution can be done in two ways such as: by using in house technical team and by giving contract to a third party (service firm).

- **Technical Executions:** Installing and implementing the components and technologies like HVAC, Vertical Transportation system in the specific location according to the client preference by the in-house expert technical team.
- **Execution through Third Party:** In very rare cases, RISL executes their operations of projects by other engineering services providing firms when the work order value is very low or profit margin is close to zero. Before doing that, a contract is signed with the third-party vendor.

- **Maintenance:** This process includes every type of after sales services. After executing a project, RISL provide and ensure service for the installation under the warranty period. Under the warranty period, RISL is responsible for any technical issues. Moreover, clients may get additional service for their provided solutions.

Here, each process is a part of the whole supply chain. At Rancon Industrial Solutions Limited, the real tasks and activities of the supply chain department start with the work orders of clients primarily. All the departments of the firm work together in a coordinated way. Sales and Marketing department take initiatives to generate a lead while Accounts and Finance departments manages the financial resources required to supply chain operations. Additionally, the design team works with the supply chain team directly.

3.2. Stages of RISL's Supply Chain

The supply chain processes of Rancon Industrial Solutions Limited are followed by some specific core stages. In each stage, there are some main tasks to be completed. RISL integrate and use their own ERP system to initiate tasks in most of the supply chain stages and activities so that the supply chain processes can be smooth and efficient at the same time. The standard supply chain processes can be divided into six strategic stages:

1. Planning and Demand Forecasting

This is the initial phase of a supply chain process. Almost every firm who have supply chain division go through this stage. The supply chain department begins by aligning with the Sales and Design teams after getting the final work order.

This stage includes activities like Analyzing building blueprints and project timelines to predict when equipment (chillers, elevator motors, LED panels) will be needed on-site. It helps to avoid the problem of zero stock while ensuring no time loss for active construction sites. RISL uses **AI-driven forecasting** to estimate the global shipping delays and local holiday seasons (like Eid), which can disrupt port operations in Chittagong.

2. Sourcing and Procurement

This sourcing and procurement stage is the most important stage as it is directly related with finance. Profit margin and losses are mostly depending on the activities of the stage. This stage sometimes refers as "Relationship Stage" because it includes parties like local and foreign vendors, suppliers, distributors etc.

This stage includes activities like vendor on boarding, collecting quotation, collecting sample order, analyzing comparative statement, negotiating with the local suppliers and global brands for pricing and technical requirements, signing contract/agreement, issuing purchase orders to suppliers and opening Letter of Credit (LC), collecting the ordered materials etc. Generally, RISL uses their ERP system to accomplish these mentioned tasks time by time.

These activities of this stage will be discussed in the **Chapter-5 Sourcing and Procurement** in details.

3. Inbound Logistics Management

The third stage is basically managing and handling the physical movement of high-value engineering goods. This stage involves the received materials from suppliers. It focuses on managing the incoming supply of raw materials or finished goods to the warehouse. It is very much essential to maintain time management regarding the movement of

goods to the project sites from port or warehouse. Inefficiency may increase project handover time, transportation expenses, operational costs which may lead to customer dissatisfaction.

The third stage of RISL's supply chain includes activities like tracking shipments from global ports to Chittagong or Mongla and local shipments as well. Clearing the customs to release the ordered goods from abroad is also a core activity of this stage. RISL also make each travel and movement decisions related to the received materials (VRF, HVAC components etc.). After receiving the materials in good condition, RISL identifies the appropriate time to hand over the materials to the project site from warehouse. The current destination and final destination of the materials, who will be in-charge to handle the goods are assigned through ERP system.

4. Warehouse Management

The fourth stage includes the responsibilities and tasks related with inventory. This is the place where the received materials are being stored but for heavy and massive items RISL is used deliver the good to the project site directly in most cases which helps to save space in warehouse and transportation costs as well. It is mostly happened for imported items. RISL's warehouses act more like assembly hubs than simple storage. The whole warehouse is managed with automated ERP system by Rancon Industrial Solutions Ltd.

Warehouse management involves tasks like organizing every component (the main unit, sensors, copper pipes, and mounting brackets) in a specific area with similar items. Using RFID tags and ERP systems to maintain real-time visibility, ensuring valuable part (like a specific elevator rail clip) is not missing, which might incur a huge loss for a project. Maintaining and monitoring ageing schedules, LIFO (Last In First Out) and FIFO (First In First Out) methods to dispatch the items from warehouse. Loading the delivery vehicle with accurate and required materials for a project site also a part of warehouse management.

5. Distribution and On-Site Delivery

This stage refers to the management of the flow of goods in an efficient way. Basically, this stage involves managing logistics, inventory and transportation to ensure products are available in the right location on right time. Distributing goods and materials to the site according to the planned schedule by maintaining time frame. RISL always try not to deliver the total number of require materials at a time, it may require more vehicles at a time and may have material damages as well.

This process is based on activities like scheduling specialized and suitable transport for heavy machinery and sensitive items, moving goods from the central warehouse through various channels. Sometimes On-Site-Delivery is used to deliver the goods directly to the project site. A final Pre-Delivery Inspection is performed to ensure no transit damage occurred before the items officially received by project engineer or client at the site.

6. Reverse Logistics and Service

Reverse logistics for material return means the process of moving goods from their final destination (project site) back to the warehouse and then sending to the manufacturer. It involves managing the flow of damaged or end of life materials to recover value or ensure proper waste management. Regarding the faulty items the supply chain here continues after the sale.

This reverse logistics includes activities like managing the return of defective parts under warranty, handling customer or industrial returns due to defects or incorrect shipments, and the supply of spare parts for Annual Maintenance contracts. Repairing or remanufacturing the returned product to be sold as refurbished. But most of the time Rancon Industrial Solutions Ltd places further order immediately after finding manufacturing issues in a component for local purchases. Reclaiming high value components that are no longer functional or usable. RISL claim replacement for the imported tech items which cannot be serviced.

As a concern of Rancon Group, RISL has the access to an internal ecosystem of their sister companies or concerns (such as Rancon Infrastructure and Engineering Ltd, Rancon Properties Ltd) which allows Rancon Industrial Solutions Ltd (RISL) to manage

project materials and components within the group rather than outsourcing to outside vendors all the time.

Chapter 4: ERP Implementation at Rancon Industrial Solutions Ltd.

4.1. Introduction

ERP stands for Enterprise Resource Planning. It refers to a type of software that organizations use to manage and integrate different resources and various aspects of their business such as finance, human resources, supply chain, manufacturing, and other core processes.

ERP systems are designed to provide a central store-house of information that can be accessed and used by different departments within an organization. The goal of ERP is to enable seamless flow of information across the organization, improve operational efficiency, and support informed decision-making. A complete ERP suite (having all functional modules) software that helps plan, budget, predict, and report on an organization's financial results.

The ERP software was introduced and implemented at Rancon Industrial Solutions in 2024 with aim of data integration, departmental collaborations, paperless operations in order to increase productivity and run business operations in a smooth and efficient way.

Leading ERP software providers in the business world are SAP, ORACLE, MS Dynamics, Epicor ERP, NetSuite, WorkDay. These software companies are very known faces in the ERP software market.

4.2. ERP System of Rancon Industrial Solutions Ltd

The ERP software that Rancon Industrial Solutions Ltd uses is called **ERPonTheNet**. The ERP provider and developer of ERPonTheNet is **Progeny Technologies Ltd.** (often referred to as **pTech**). It is a prominent digital transformation and enterprise software firm based in Dhaka, Bangladesh. Founded in 2012, the company has established itself as a specialist in automating complex business processes for medium-to-large enterprises.

ERPonTheNet is the flagship Enterprise Resource Planning (ERP) system of Progeny Technologies Ltd. It covers everything from global product sourcing and procurement,

multi-stage manufacturing to warehousing, supply chain operations, customer relationship management etc.

RISL uses Enterprise Resource Planning software to manage day-to-day business activities such as accounting, procurement, project management, risk management and compliance, and supply chain operations. ERPonTheNet creates interactive environment for RISL to help manage & analyze data associated with manufacturing, such as inventory, orders, accounting and so on.

Many concerns of Rancon Group are using the same ERP system provide by Progeny Technologies Ltd. There are many popular businesses in Bangladesh are using the ERPonTheNet software to operate their business. The businesses that use ERP of Progeny Technologies Ltd are mentioned below:

Figure 5: Brands using same ERP

4.3. Purposes of ERP

ERP software is responsible for serving multiple purposes of RISL. The company uses the ERP information system with an aim to integrate data of all departments and functions across the company into one system. It helps to integrate all facts of the

business including Planning, Manufacturing, sales & marketing, finance and supply chain.

Implementing an Enterprise Resource Planning (ERP) system at **Rancon Industrial Solutions Limited (RISL)** was a strategic move towards data-driven and automated business model. RISL implemented the ERP system in the business back in 2024 but it has become live from the beginning of 2025.

ERPonTheNet was implemented in order to serve the following purposes of RISL:

I. To ensure operations run smooth and efficiently.
II. To link the Sales Bill of Quantities (BOQ) directly to the Procurement and Warehouse modules.
III. To Manage Letters of Credit (L/C) and foreign exchange
IV. To track the landed cost of every component, including freight, customs duties, and port charges.
V. To maintain a Digital Service History for every installed unit.
VI. To prevent stockouts and manage stock of expensive electronic components.
VII. To replace manual paper approvals by enabling automated approvals.
VIII. To ensures all transactions are NBR-compliant (VAT and Tax).
IX. To track and evaluate the performance and lead times of global and local suppliers.

4.4. Features of the ERP Software

In the local market, Progeny Technologies works as a bridge between expensive global ERPs (like SAP, ORACLE) and basic accounting software. They provide locally-tailored automation specifically for the Bangladeshi industrial and corporate landscape which understands the specific regulatory and logistical challenges of doing business in Bangladesh. The ERP software contains Accounts module, Supply Chain module, CRM module, Project Management module, Requisition and Billing module.

The **Supply Chain** department and **Design** department of Rancon Industrial Solutions use the ERP modules mostly. Their most of the tasks are interconnected and related with the ERP system. The Supply Chain of RISL is totally automated and relies on the ERP system though a few functions are not fully functional yet.

Here are the key features of the ERPonTheNet system of Rancon Industrial Solutions Ltd.

1. Core Functional Modules

ERPonTheNet is built with functional modules based on business departments and that can be customized at any time.

- **Finance & Accounting:** The foundation of any ERP. It manages general ledgers, accounts payable/receivable, budgeting, and financial reporting. The system often includes **AI-driven tax compliance** and automated VAT calculations.
- **Supply Chain Management (SCM):** Tracks the flow of goods from procurement to the end customer. It manages vendor relationships, purchase orders, and logistics.
- **Inventory & Warehouse Management:** Provides real-time visibility of stock levels, storage locations, and "reorder points" to prevent stockouts or overstocking.

2. Strategic Procurement

It ensures RISL to manage the whole purchase and procurement process of physical goods from local and foreign vendor.

3. Data Integration and Centralized Database

The most critical feature of this ERP is Data Integration. Instead of having separate software for sales and accounting, every module feeds into a single, centralized database. When a sales/project closes, the system automatically updates the inventory count, alerts the warehouse for shipping, and generates an invoice for the finance team.

4. Real-Time Analytics and Reporting

It helps to do analyze the real data to measure and summarize the report of revenue growth, production efficiency etc. Using historical data to forecast future trends, such as predicting a surge in demand for HVAC units during the summer season.

5. Automated Workflow Management

ERPonTheNet has already replaced most of the manual, paper-based processes with digital workflows. Tasks like sending payment reminders to clients or approving purchase orders have been automated based on preset instructions.

6. Security and Accessibility

Not everyone can see everything on the software. A warehouse employee sees stock levels, while the upper management like the General Manager, Head of the department have the full access to see the full profit-and-loss statements.

One of the core features of ERPonTheNet is that it is cloud-based system which allow employees to access data securely from mobile devices ensuring data backup in server.

Interface of the ERP Software

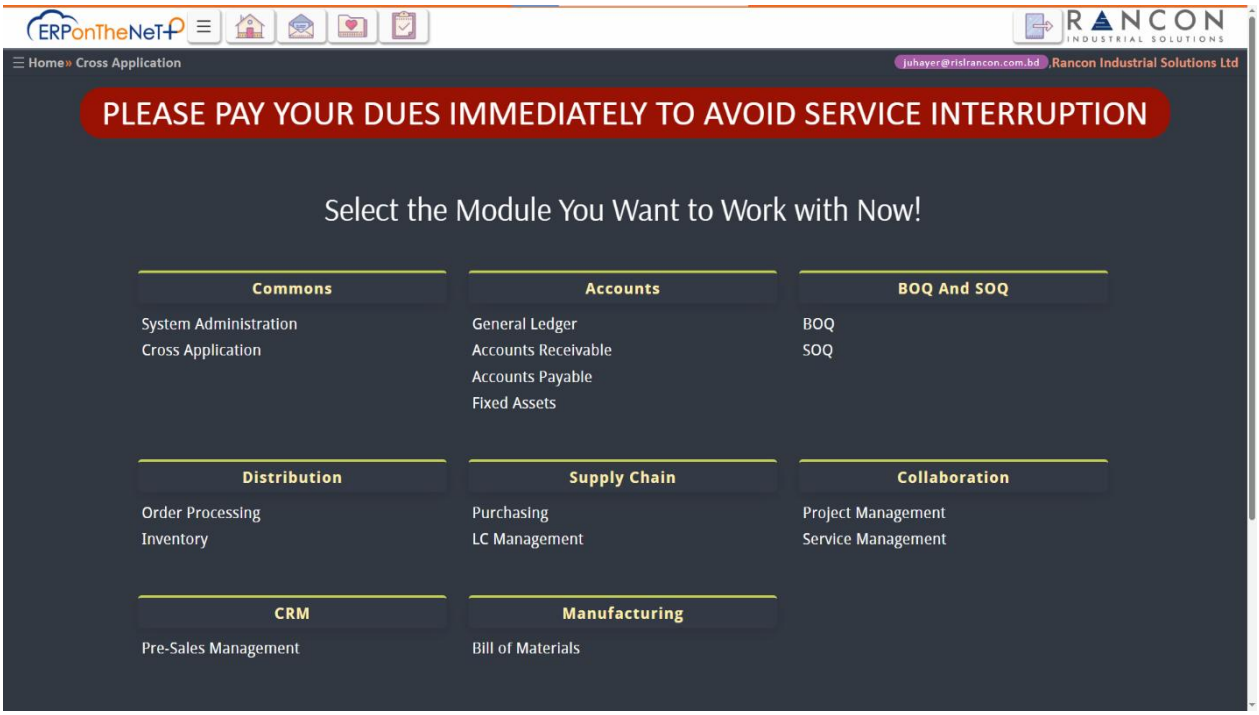

Figure 6: Initial Interface of the ERP System (ERPonTheNet)

Here is sample of the interface of the ERP software. The interface of the ERPonTheNet is very much user friendly to its users. In this ERP of RISL, HR and Marketing modules are not available currently. Otherwise, all the functional modules like are divided in total 8 sections.

The interface is user friendly. In the ERP of RISL, HR and Marketing modules are not available currently. Otherwise, all the functional modules like are divided in total 8 sections and they are Commons, Accounts, BOQ and SOW, Distribution, Supply Chain, Collaboration, CRM and Manufacturing.

Most of the sections are related with supply chain and design departments operations. The whole Supply chain processes are divided into various modules. The modules that supply chain of RISL mostly use in the day-to-day operations are Purchase/Procurement module, LC Management module, Inventory module, Project Management module, Cross Application module. The BOQ (Bill of Quantities) and SOQ (Statement of Quantities) modules are used by Design department while providing the requisition of a project. Sales team uses Pre-Sales Management module and the

Project Management module to onboard a project after a successful contract. Cross application module is jointly used by supply chain and design departments. Service Management module is generally used by the service or maintenance team. Finally, the Accounts section is totally operated by Accounts and Finance department.

Advantages of ERP System

The successful implementation of an ERP (Enterprise Resource Planning) system delivers transformative positive outcomes that helps to achieve successes in business with administrative efficiency. The advantages that RISL is getting because of using ERPonTheNet are mentioned below:

1. Efficient Resource Management: Managing the company's valuable resources and operations which results increasing operational efficiency.

2. Accurate Data Management: ERPonTheNet helps Rancon Industrial Solutions Ltd to obtain and use accurate information on time.

3. Data-Driven Decision Making: It helps management to take critical decisions due to the proper integration of data.

4. Positive Growth: It enables positive impact on Revenue, reduces various costs (operational costs, freight costs). Moreover, it helps to get better return on investment.

5. Increased Productivity: Productivity of the employees those use the ERP system has increased significantly.

6. Automation in Operations: It helps to reduces the paper work efforts of management overhead like e-procurement and speeds up operations without human errors.

7. Real Time Visibility: It provides real-time visibility on import costs and shipment status. It ensures "End-to-End" tracking of every project and penny.

8. Inventory Optimization: By predicting demand more accurately, RISL can avoid buffer stock/excess inventory issue, which lowers warehouse costs and frees up working capital. It also helps to identify slow-moving parts and automated reorders for high-demand items like HVAC filters or compressors which reduces the risk of having surplus inventoy.

9. Seamless Supplier Evaluation: It helps to track performance of supplier and vendors. The system automatically input entries regarding supplier's on-time delivery rate and quality score, making it easy to identify which suppliers are the most reliable.

10. Effective Logistics and Distribution: As RISL deals with high-value engineering equipment and technologies, logistics are essential part of the business. It helps to deal with complexity of global trade regulations, including automated documentation for customs for imported items.

Disadvantages of ERP System

While ERP (Enterprise Resource Planning) systems are the backbone of modern business and industrial operations but they may come with significant demerits as well. There are some disadvantages facing by RISL due to the ERP system mentioned below:

1. High-Cost Maintenance: Annual maintenance fee of ERPonTheNet is incurred a big amount of expense but because of local provider it is easily bearable by the firm.

2. Extreme Implementation Complexity: Implementation of ERPonTheNet is a lengthy process to make it fully functional. Even at this point, many developments are required to integrate the whole system. Full deployment is really time consuming.

3. Resistance and Training: Most of the senior employees and managers feels reluctant to adapt the change and join training sessions regarding the use of ERP systems.

4. Difficult to Reorganize: Once the implementation is done of ERP system accommodate change once implemented but changes in additional modules can be done easily.

5. Technical Complexity: Employees who were proficient in previous systems frequently experience difficulties regarding expertise, which can cause worry and lower job satisfaction.

Chapter 5: Sourcing and Procurement of Rancon Industrial Solutions Ltd.

5.1. Introduction

Sourcing is a broader term. It is the **strategic** phase. Sourcing is a specific part of the procurement cycle. It is a strategic process of identifying, analyzing, evaluating, and selecting vendors or suppliers from which to get products, services, or essential elements for the organization. Sourcing is very much important for any organization because organization much know about their suppliers and also the procurement process must be fast and efficient. If the procurement process is slow then the production schedule will be delayed and as a result company will face huge loss. In contrast, procurement refers to the complete process of procuring goods, services, or works from outside sources. It covers assessing needs, sourcing, negotiations, buying, receiving and inspecting items, billing, payment, and managing suppliers. Procurement always follows a specific cycle.

As Rancon Industrial Solutions Limited is a solution provider of HVAC, VRF, Vertical Transportation, Digital Display in Bangladesh so they require variety of electrical components and equipment to provide service to their customers. RISL doesn't have own manufacturing plant to produce the items that require to install the solutions. For that reason, RISL always has to depend on sourcing and procurement process by ensuring all components meet the latest BSTI Star Ratings and BNBC safety standards during the ordering phase.

5.2. The Sourcing Decisions of Rancon Industrial Solutions Ltd.

The sourcing decisions are taken by the top and middle management of the company with the concern of Design team and head of technical. These sourcing decisions are often strategic regarding which products or services will be manufactured by local manufacturers and which will be imported from global manufacturers.

There are two types of sourcing decisions that are generally made by RISL such as:

1. Insourcing

Rancon Industrial Solutions Limited uses its own resources (HR) to provide services. Basically, for providing installation and maintenance service RISL choose Insourcing.

2. Outsourcing

The use of supply chain partners to provide products or services.

Outsourcing is used by RISL to source physical goods from local and global market. RISL goes for Outsourcing while procuring physical goods (VRF/HVAC units) from global brands like Samsung, Daikin, LG, Kohler and installation components (Copper pipes, Insulations) from local suppliers.

Rancon Industrial Solutions mainly sources their most of the components through outsourcing because insourcing requires massive investment in machinery and factory setup. Although outsourcing is very much suitable for RISL as it helps to minimize the costs rather than producing inhouse. Different types of HVAC, VRF, Chiller, Display panels, various sensors and other components are outsourced from multiple countries like China, India, Thailand etc. Rancon Industrial Solutions Limited mainly follows **Multiple Sourcing Strategy**. RISL provides its services to various type of clients. The requirements are different from client to client so that there is no single supplier. RISL works with several suppliers to obtain various types of components, parts and technology.

While selecting a supplier, Rancon Industrial Solutions Limited keeps three things in mind. They are **Price, Quality,** and **Delivery Reliability**.

Price: Rancon Industrial Solutions Ltd always looks after the price which rate is providing by the supplier. RISL always tries to get the components with proper price. As a part of group of companies and well-known brand in the market, it gets products at a cheap rate most of the time.

Quality: Rancon Industrial Solutions Ltd focuses on price but at the same time they consider about quality of the product. If the product quality is not standard or suitable then there might be problem with the installation or durability which may affect the relationship with the customers/clients. Quality is very much important for components

which RISL is dealing with. So, they try to select the suppliers who are proving best quality with average price or good price.

Delivery Reliability: Beside the quality and price, RISL also focuses on delivery/lead time as well if the supplier misses the lead time to deliver the goods then the installation duration will be increased or project handover time will be delayed which may include more costs. For this reason, RISL needs to select the supplier who are reliable and punctual about the time.

Rancon Industrial Solutions Ltd always try to maintain the mentioned 3 things while selecting a supplier.

5.3. Portfolio Analysis of Rancon Industrial Solutions Ltd.

Portfolio analysis in sourcing is a strategic tool used by business organizations to evaluate and manage their procurement activities. It involves categorizing and analyzing different types of goods and services that an organization procures, based on their impact on the business and the complexity or risk associated with their supply. The primary goal is to develop tailored sourcing strategies for different categories of purchases to optimize cost, reduce risk, and improve supplier relationships.

Rancon Industrial Solutions Ltd provides engineering solutions and industrial service rather than consumer goods. In order to perform the servicehey need to procure different types of components, equipment and technology from different local and foreign suppliers to provide the actual service to the clients which is their core business. In order to do that they are bound to maintain a positive relationship with the suppliers. To ensure efficient supply of components portfolio analysis is very much import by doing this analysis it becomes easy to know in which quadrant the goods or products belongs to and how to deal in this situation. Portfolio analysis regarding the products helps to build strategies and actions with the supplier

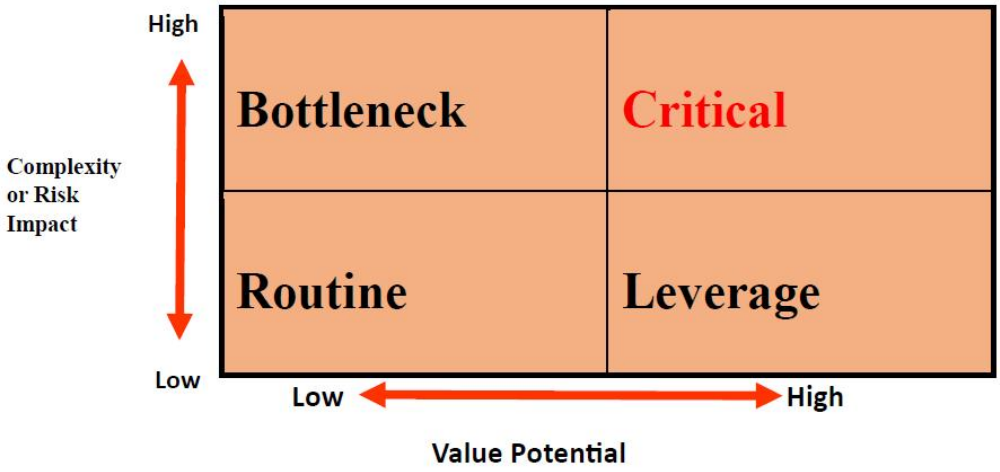

Figure 6: Portfolio Analysis of Rancon Industrial Solutions Ltd.

By doing portfolio analysis, the products of Rancon Industrial Solutions Limited are complex and associated with high risk. Moreover, the value potential of the products is high so that the strategy will be go with the **Critical Quadrant**. There are few qualified sources of supply in the local and foreign market and the expenditure is high as well. Provided solutions or products to the customers contains Critical design and high quality. The components specification is complex and rigid. Based on the Critical quadrant, Rancon Industrial Solutions Limited follows the mentioned Strategy, Tactics and Actions.

Strategy:

Rancon Industrial Solutions Limited tries to **create partnership** with the suppliers. They also try to maintain that partnership as well. By creating partnerships with suppliers, it becomes easier to run the operations and business.

Tactics:

They try to **increase selected suppliers**. They look after to onboard new suppliers and vendors in the local and global market. If they have more suppliers in hand then they can go for next level of negotiation with the suppliers regarding quality, price, requirements.

Actions:

- When they have more suppliers from China, India and Thailand then they may go for **heavy negotiation.**
- They need to have clear **supplier process management.** The process needs to be streamline so that they can easily order and get the components from the selected suppliers in an efficient way.
- There should have **contingency plans.** If the selected supplier is unable to deliver the products, then there should have another supplier from where company can get the required components with same quality which will not impact the lead time.
- RISL needs to **analyze the current market** properly to have clear idea about the current situation. The main objective is to get quality components with average market price. They have to focus on minimizing the procurement cost.

Rancon Industrial Solutions Limited generally relies on **Fixed Price Contracts** and **Cost Based Contracts** (Cost-plus incentive fee or Cost-plus fixed fee) with their suppliers.

Types of Purchases

Rancon Industrial Solutions Limited procures different types of components and supplies from different suppliers. This is done by insourcing and outsourcing. They procure different goods from different places and suppliers.

Generally, the following types of purchases are done by Supply Chain department of RISL:

- **Raw Materials** – GP sheet, Copper items, Upvc items, Rubber Insulations
- **Semi-finished Products and Components** – Chiller, Controller, PCB boards
- **Finished Products** – HVAC outdoor units, Giant Display units, Various Sensors

- **Maintenance, Repair, and Operating Items** – R32 Refrigerant
- **Office Supplies** – Paper, Pen, Printer, Files and other stationary items, Toiletries

Purchasing from local suppliers is done by issuing purchase order but for international purchases from global brands is done by opening Letters of Credits (LC).

Rancon Industrial Solutions Ltd has its own logistics support but sometimes they take the logistics support from different logistics firms who bring the components in Bangladesh and hand over to them.

5.4. Objectives of Using ERP for Sourcing and Procurement Process

Rancon Industrial Solutions Ltd started to use ERP in the procurement for effective and efficient purchase and procurement process. In this process, most of the big corporations are dependent on automated or ERP systems and RISL is one of them.

There are few valid reasons behind implementing ERPonTheNet in Sourcing and Procurement process.

- **Automation:** To eliminate paperwork with the automated ERP system and procurement module
- **Time Management:** To reduce time between need recognition and purchase order issue and receive materials
- **Improve Collaboration:** For improving communication among the team and with the suppliers as well
- **Error Free Operations:** To enable effective operations and reduces errors in the process
- **Cost Minimization:** To reduce overhead, order and invoice processing costs
- **Historical Data:** To get access to the previous procurement data within a short time.
- **Easy Approval:** To enable and ensure easy approval process from the upper management.

- **Data Security:** For enhancing the data security by ensuring limited access to the users.

5.5. The Purchase and Procurement Process of Rancon Industrial Solutions Ltd.

The purchase and procurement process of Racon Industrial Solutions Ltd is fully accomplished by the Supply Chain department. This process gets started after getting the requisitions from the design team when final work order is placed from the client side. Rancon Industrial Solutions Ltd follows a specific process regarding procurement.

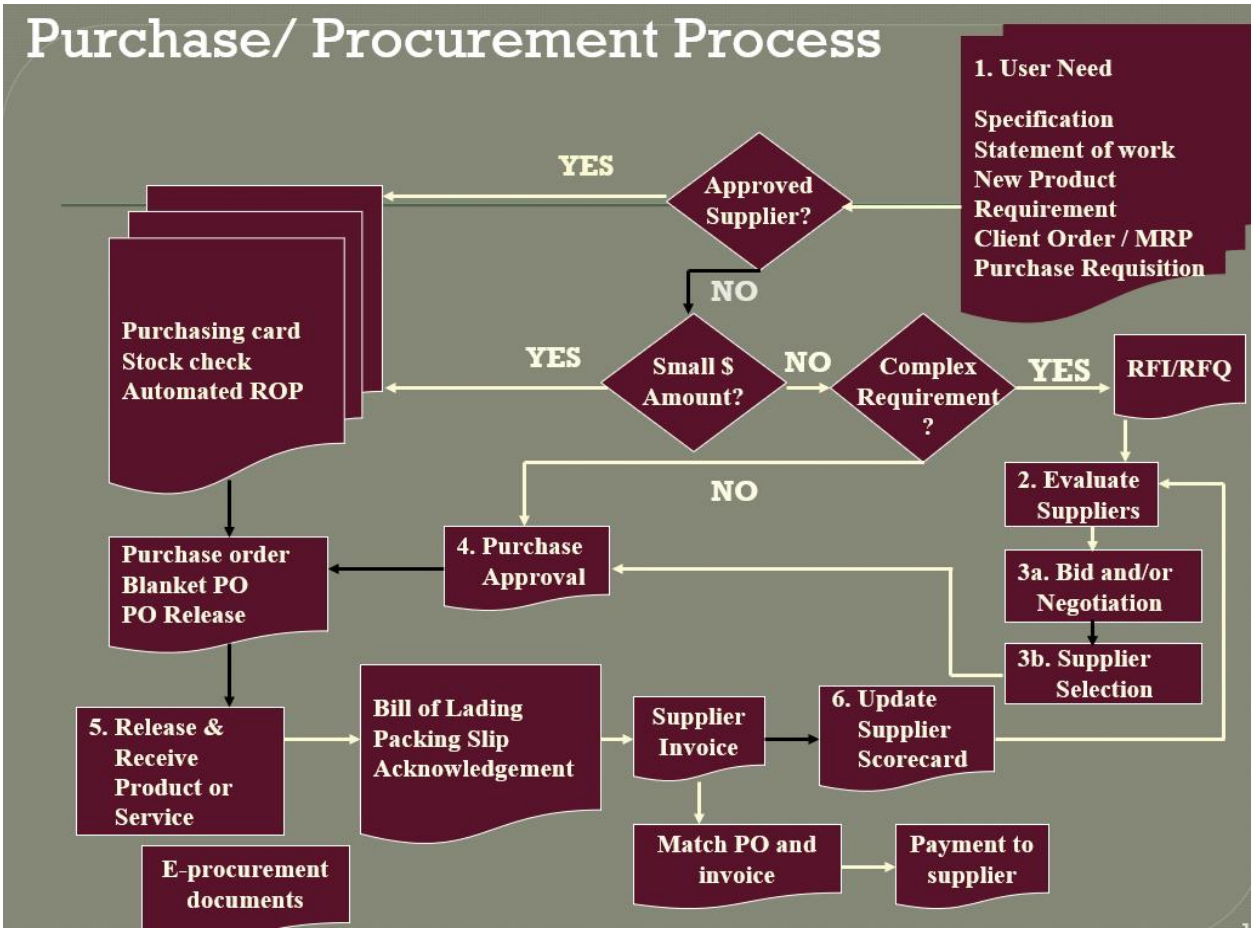

Figure 7: Purchase and Procurement Process of Rancon Industrial Solutions Ltd.

The whole purchase and procurement process of Rancon Industrial Solutions Ltd. and its related activities are **Fully Automated and ERP system based**. This process is done by using **BOQ module** and **Purchasing module**. Purchasing module is used to input requisition, request quotation, analyze comparative statements, issue purchase orders.

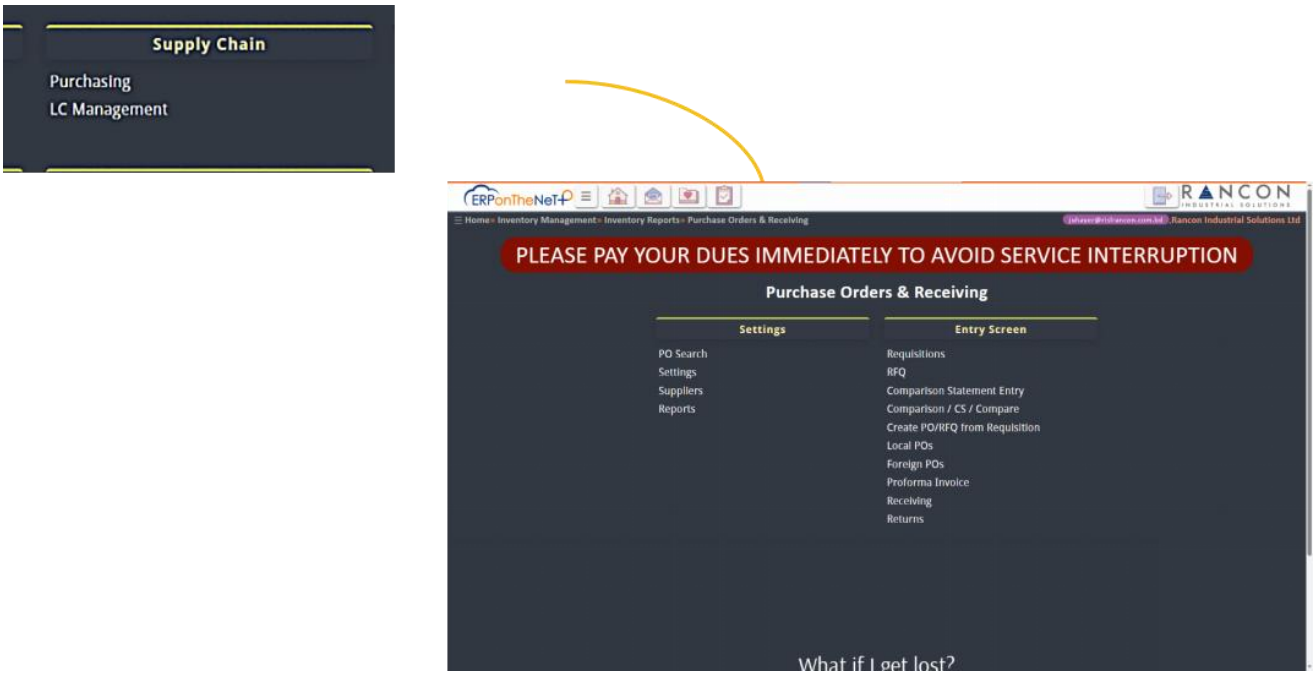

Figure 8: Purchasing Module of ERP

After having the requisition list (A requisition list is consisting of all materials that are required for a particular project) from Design team of a final work order, the Supply Chain team goes for warehouse closing inventory report to check whether the materials are available in warehouse or not. If available then allocate those for the project and if not available then go for further procurement.

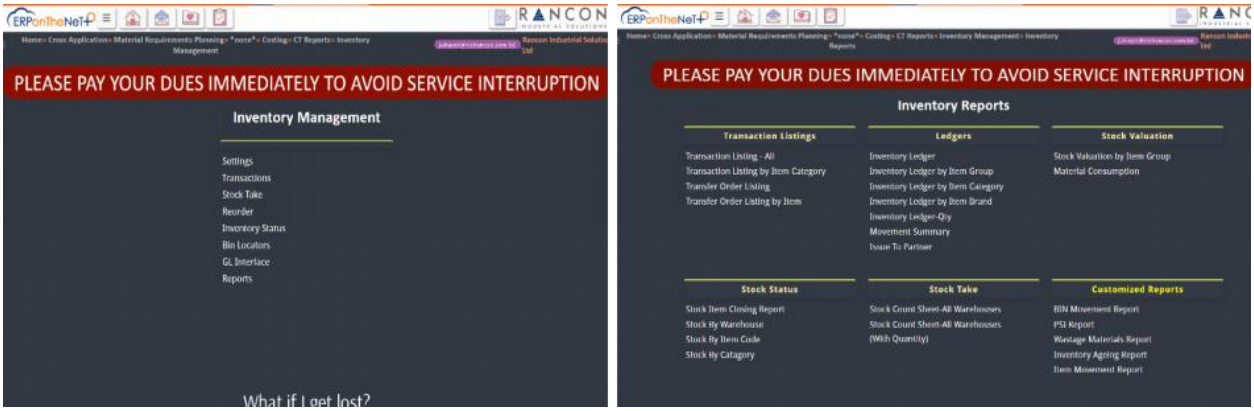

Figure 9: Inventory Module and Inventory Reports Interface in ERP

Procurement process starts with user need (When materials are not available or does not have enough stock in warehouse)

1. User Need: The Design Team provides purchase requisition of different components/ equipment of different specification.

If RISL has approved suppliers then procurement department check the inventory stock and if needed they communicate directly with the suppliers for quotation to place purchase orders. If they do not have any approved supplier then supply chain team requests to the suppliers to provide Information (RFI- Request for Information) or Quotation (RFQ- Request for Quotation).

[Generally, supply chain team goes for vendor selection process for complex and high value product purchases.]

2. Evaluate Suppliers: Supply chain department evaluate suppliers based on RFQ provided by the suppliers. Supply chain team do comparative statement analysis of the provided quotations from suppliers to evaluate the suppliers based on their product quality, price and delivery.

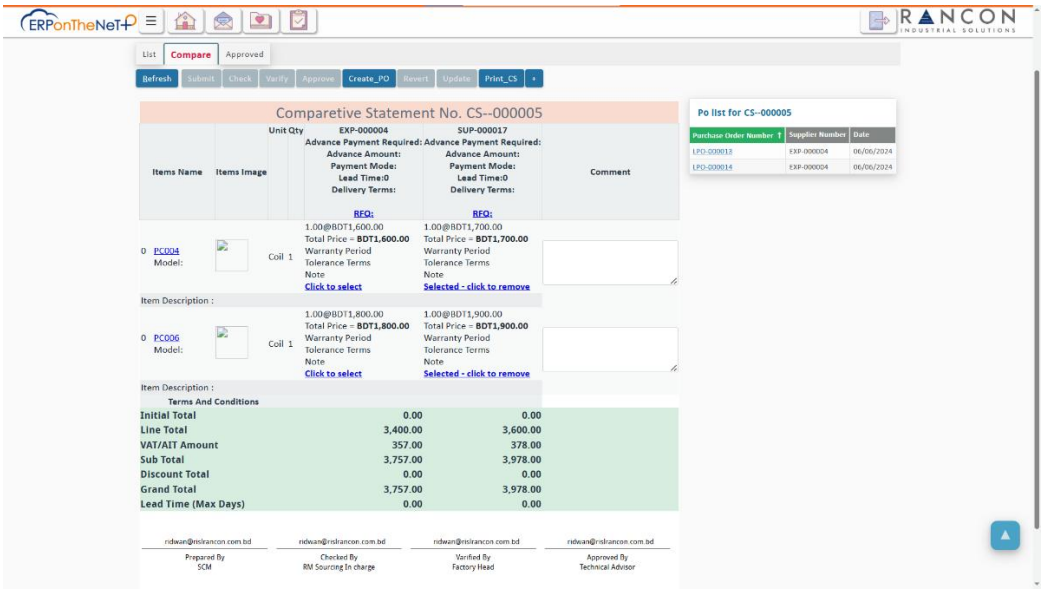

Figure 10: Sample of a Comparative Statement Analysis of Two Suppliers Using ERP

3a. Bid or Negotiation: After the supplier evaluation then comes the biding/ negotiation with suppliers. It is generally done by over the phone or in face-to-face meeting (for local suppliers). The following negotiation framework or process is followed by the supply chain team of RISL.

Figure 11: Negotiation Process of Rancon Industrial Solutions Ltd.

Generally, supply chain team uses these three negotiation techniques to negotiate with suppliers such as **Low Ball, Honesty and Openness,** and **Caucus.** This negotiation is done regarding the price, quality and delivery time most of the time.

3b. Supplier Selection: After having a proper negotiation, supplier is selected by providing proper information about the requirements and specification.

4. Purchase Approval: When the supplier is selected and purchase is conformed to the supplier then supplier receives Purchase Order from the supply chain team. The **Purchase Order** is issued to supplier through ERP system. After issuing purchase order,

a partial amount generally 30-35% of total Purchase order value is paid to the supplier. It varies on some conditions

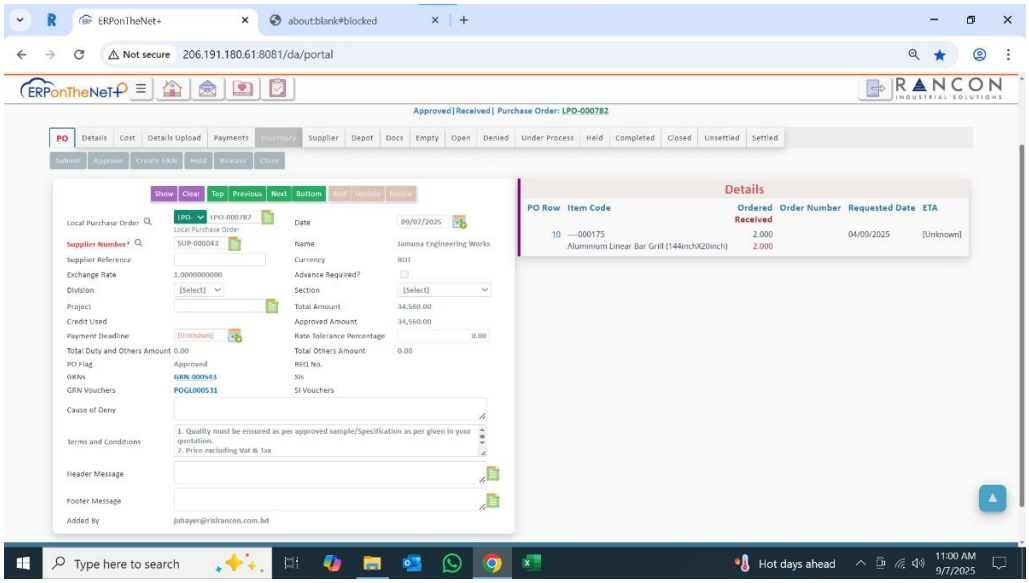

Figure 12: Interface of Local Purchase Order (PO) in ERP

Generally, an issued purchase order from supply chain team of RISL contains P.O. number, Quantity, Material specification, Quality requirements, Price, Delivery date, Method of delivery, Ship-to address, Order due date etc.

5. Release and Receive Product: The ordered products are received at supplier side or by the logistics firm. After that products are released from suppliers end and sent to the warehouse of RISL along with **bill of lading** and supplier invoice.

After receiving the products/materials at warehouse, warehouse in charge match the **supplier invoice** with the issued PO physically to check the specifications, quality and quantity of the received products. If everything is fine then the final or remaining payment is given to the supplier.

6. Update Supplier Scorecard: Supply chain team keeps a record of the supplier in the vendor's database in ERP.

Finally, the supply chain department issue a GRN (Goods Received Note) though ERP which automatically updates the inventory count and other related information in ERP system.

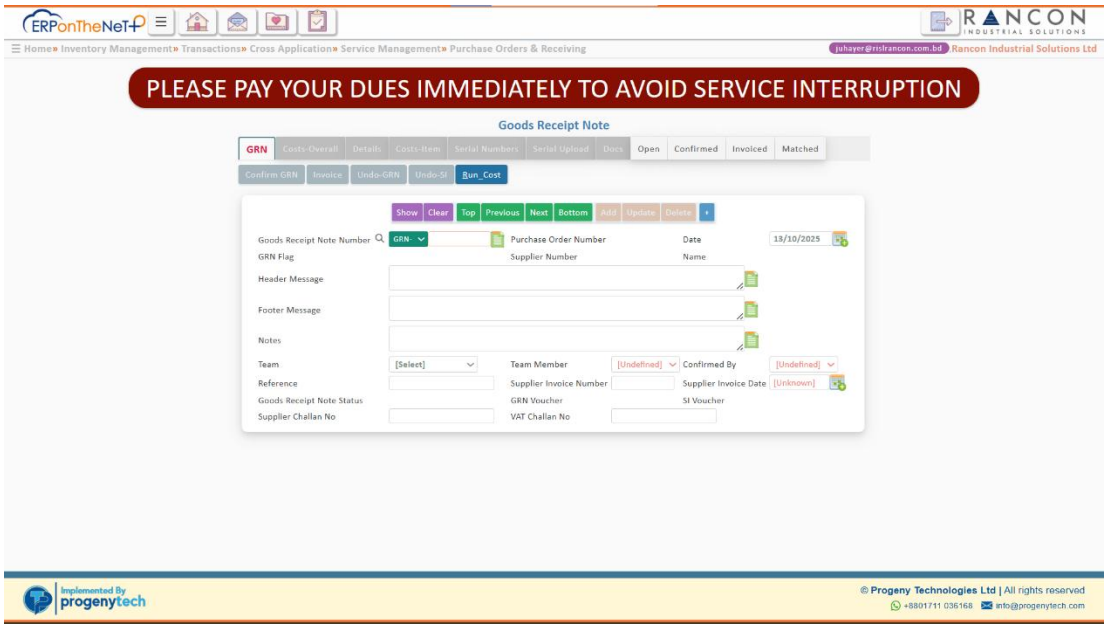

Figure 13: ERP Interface of GRN (Goods Receipt Notes)

5.6. Import Process of Rancon Industrial Solutions Ltd.

In Bangladesh, Rancon Industrial Solutions Limited is an electrical and engineering service provider who is working with global brands like Samsung, Daikin, LG, Kohler, Fuji, Mitsubishi. These brands are known for manufacturing high-quality HVAC, VRF, Elevator, Escalator systems. In order to run business operations and provide solutions to the customers, Rancon Industrial Solutions Ltd has to go for import or global sourcing process to order goods. They have specific agreements and contracts with these global brands.

Import process includes the almost similar procurement purchase model except few documentations and stages.

Product Selection and Ordering

The sourcing and supply chain manager identifies the products to be imported from the requisition or demand from the clients. Then the manager opens a LC (Letter of Credit)

from LC Management module using ERP system. Secondly, the responsible person of the global brand like Samsung provides each and all details and features of the product via mail. Then, RISL issues a purchase order through ERP including the product model, unit and other necessary details then sends it to the concerned brand's order processing unit. The purchase orders are approved by the Divisional Director.

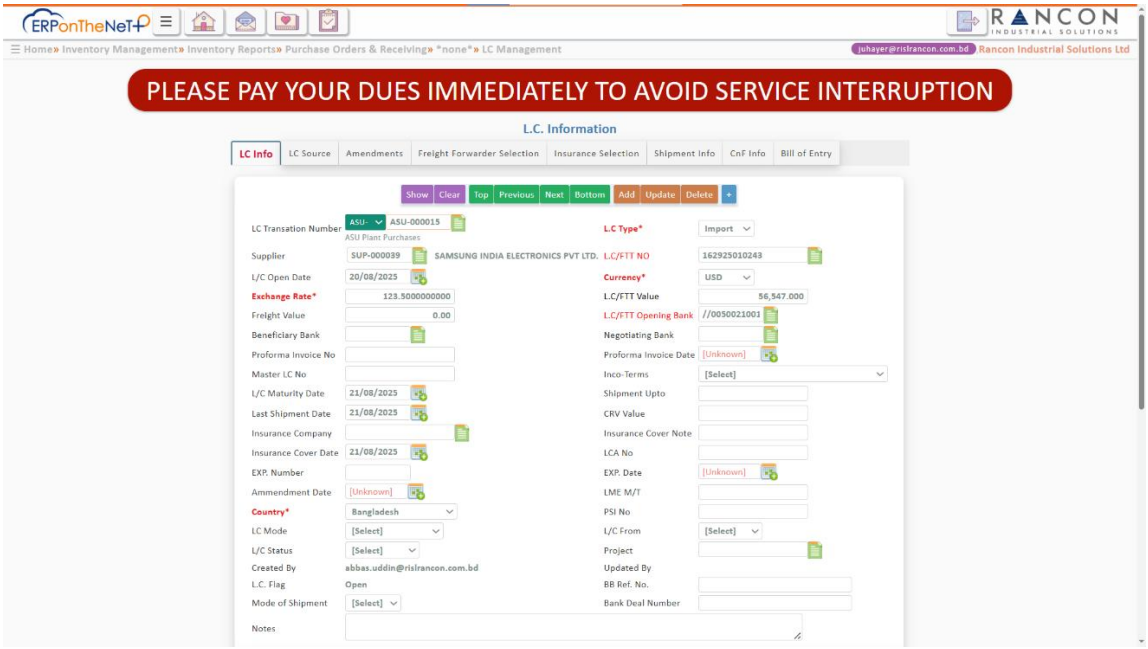

Figure 14: Interface of Opening a Letter of Credit (LC) in ERP

Import Procedure and Documentation

After issuing the purchase order, concerned brand sends a feedback mail with an attached preliminary bill which is known as performer invoice (PI) which includes the unit base price and total cost (Quotation), and other information with details. Then RISL agrees with the PI via mail. After that, the specific brand sends a confirmed performer invoice (PI) with all product details, final pricing, shipping and logistics, weight and volume and financial terms with proper authorization. After that RISL uses the confirmed PI and submits to the bank for an application of a **Letter of Credit (LC).**

Mode of Transport

HVAC, VRF, Elevator units and Digital Display panels are too heavy electrical products. Though the air freight method is faster than other methods but it is not suitable to use for carrying these heavy and massive items because of high expense as more space is

required. For that reason, business firms of this industry use **Shipping** freight method to transfer goods from on country to another using sea. Though this method is time consuming but it is cost efficient, safe and manageable as well. So, after opening an LC, selected internation brand sends the products via shipping method with their responsibility.

Customs Clearance and Local Delivery

When products arrive at customs in Chittagong port, the necessary office and bank documents are submitted to customs by the responsible person of the supply chain team. Then the products get released from the customs. After that, the responsible person of Rancon Industrial Solutions Limited sends the product to warehouse or project site directly using company's own logistics. To be completed, the overall process from order to receiving products generally takes a minimum of two months. In addition, the entire LC mechanism is not visible to the applicant and beneficiary side.

Chapter 6: Inventory and Warehouse Management of Rancon Industrial Solutions Ltd.

6.1. Introduction

Inventory refers to the physical goods and materials that a company holds for the ultimate purpose of resale, production, or utilization. In simple terms, **inventory management** is the process of ordering, storing, using, and selling a company's inventory. This includes everything from raw materials and components to finished products ready for the customer.

Being an Electrical and Engineering Services firm with no production plant, RISL operates their business with the locally and globally sourced products. These products or inventories are managed using ERP system by RISL.

Inventory management is related with warehouse management.

On the other hand, a **warehouse** is a large commercial building space used for storing inventory (physical goods) before they are distributed for sale or use. Warehouses are considered as facilities. These act as central hubs in a supply chain, allowing businesses to manage the flow of products, protect items from damage, and organize logistics like shipping and receiving.

Warehouse management is the process of overseeing and optimizing all operations within a warehouse, from receiving and tracking inventory to picking, packing, and shipping orders. It ensures that goods are stored efficiently and moved through the facility with maximum speed and accuracy. It includes organizing the layout to maximize storage capacity and minimize travel time for workers.

There are different types of warehouses which are used by businesses but Rancon Industrial Solutions Ltd uses its own private warehouses to run the operations. Basically, there are two warehouses are operated, one is located at Tejgaon in Dhaka and another one in located at Ashulia in Savar. Generally, the imported and heavy goods are stored in the Ashulia warehouse and the locally sourced materials are kept in the central warehouse (Tejgaon).

Only a few activities of warehouse management are done by using ERP at the warehouse of Rancon Industrial Solutions Ltd.

6.2. Types of Inventories

Based on the ordered, received, transformed and transported products by Rancon Industrial Solutions Ltd the products/inventories can be classified into five sections. The five main types of Inventories are-

1. Raw Materials: Unprocessed and purchased components which are required to create a product.

Example: Steel GP sheets, Copper wiring, Copper tubes, elbow, pipes for HVAC systems.

2. Work-in-Process (WIP): Items currently on the assembling space or at a site that are partially finished but not completed yet.

Example: An elevator that is half-assembled or a VRF unit mid-installation.

3. Finished Goods: Completed products that have passed all quality checks and are ready for delivery to the site for installation.

Example: A packaged industrial chiller or a completed Otis elevator ready for handover.

4. Maintenance and Repair: Supplies used to provide service and maintain the machines or installed units, but which do not become part of the final product.

Example: Refrigerant for HVAC, safety goggles, service equipment etc.

5. Goods in Transit to Warehouses or Sites: Items that have left from suppliers end or moved from the warehouse but not reached the warehouse or the project site yet.

Example: Any raw materials, finished goods or service equipment etc.

6.3. Inventory Counting System of Rancon Industrial Solutions Ltd.

There are three kinds of inventory counting methods are used by Rancon Industrial Solutions Limited to count their warehouse inventory such as Periodic, Perpetual and Cycle inventory counting methods.

Periodic Inventory Counting

In periodic inventory counting method, inventory is counted at the end of any accounting period not after every purchase and sale of the products. This method of inventory counting helps a company to count its inventory at the beginning and ending periods.

Perpetual Inventory Counting

In perpetual inventory counting method, inventory is updated continuously after every purchase and sale. It allows to provide information on each item's current inventory level.

Cycle Counting

Inventory is counted in small portions regularly instead of counting whole inventory of warehouse at once. Different items are counted on different days. It is done manually.

Rancon Industrial Solutions Limited keep their inventory record updated on a continuous basis with the help of Good Received Notes and BOM (Bill of Materials). When new components or equipment is purchased by the company a GRN is issued by the supply chain department using ERP system to update the inventory report in ERP. Then the components are stored in the inventory section of warehouse.

Rancon Industrial Solutions Ltd generally uses the Perpetual inventory counting method for the imported items, and they verify their inventory at the end of each accounting period by using Periodic inventory counting method. The perpetual inventory counting method is aligned with **ERPonTheNet**) that use barcodes or RFID tags to track every movement in real-time. This allows for "Just in Time" (JIT) ordering, where materials arrive exactly when they are needed for a project. Periodic inventory counting and cycle counting methods are used to count the local manufactured items physically

6.4. Objectives of Using ERP for Inventory and Warehouse Management

Companies invest in ERP systems to integrate and manage resources efficiently. In the same way Rancon Industrial Solutions Limited uses ERP system to manage their inventory effectively and efficiently. The objectives behind using ERP for inventory management are-

- **Prevent Stockouts:** For ensuring enough stocks of materials (capacitor, copper wires, rubber insulation) because a project cannot be stopped due to the shortage of raw materials
- **Reducing Dead Stock:** To Identify items that have been occupying space in the warehouse for years so that these can be sold or used to recover space.
- **Cash Flow Optimization:** Inventory is an asset. To ensure better management to keep more liquid cash in the bank.
- **Accuracy:** To ensure about the stock by matching system stock (what the computer says) with the physical stock (what is actually in the warehouse).
- **Automated Reordering:** For sending a reminder to the procurement department by the ERP system when a high-priority item hits its minimum stock level.
- **Landed Cost Calculation:** To calculate the exact value of a product sitting in the warehouse which includes L/C cost, customs duties, and transport.
- **Inventory Tracking:** For monitoring stock levels and locations using tools like barcodes or RFID. Tracking stock levels to ensure supply meets demand.
- **Order Fulfillment:** Streamlining the "pick-pack-ship" workflow with the help of ERP to meet customer demand and transport on time.
- **Labor Management:** To coordinate staff schedules and tasks to maintain high productivity.
- **Real Time Inventory Tracking:** An automated approach where stock levels, locations, and movements are recorded and updated the exact moment when a transaction occurs

Inventory Related Practices of Rancon Industrial Solutions Ltd.

Inventory related practices of Rancon Industrial Solutions Ltd (RISL) have moved far beyond simple counting and maintaining manual logbooks. These practices now focus on automation, cost efficiency, productivity and integration to handle the complexities of supply chain. The inventory related practices of RISL are mentioned below:

Inventory Storing Process

After arrival of the products at the warehouse of RISL, in case of imported materials, all the boxes are opened for matching with the performer invoice (PI) and attach additional label with barcode on each box or packet of the goods Every machine contains a unique serial number. Using a unique serial number and product model of the devices to generate the barcodes. It enables automated identification, tracking and keeping the inventory updated. Then the ERP inventory report of Rancon Industrial Solutions Limited is updated by creating the GRNs (Goods Received Note) in ERP against the Purchase orders and received goods. GRN is done by the supply chain department. After that, the products are stored in the warehouse. For the items of local suppliers, products are counted manually and match with supplier invoice after receiving then store them in the warehouse.

Inventory Controlling

Rancon Industrial Solutions Limited has its own integrated ERP system which includes an automated inventory management system to manage inventory. So, the sourcing, procurement and inventory are maintained in an automated way but locally sourced materials are managed manually. Purchase orders are issued for purchasing goods and after receiving the goods GRNs are generated using ERP. Then while delivering the materials to a project, barcodes on the materials are scanned to update the ERP inventory report. While assigning materials for a project after requisition, the information

like project name, delivery dates, material details and quantity need to be mentioned in the ERP.

Inventory Monitoring

Inventory module of ERP is used to monitor stock and inventory levels for every specific item and identify sales trends. When an import shipment comes at that time, Rancon Industrial Solutions Limited goes for perpetual inventory counting method then enters the new items in the warehouse. After having new requisition of materials for a new project, inventory report is checked to see whether that good is available in the warehouse or not before placing purchase orders.

Delivery Methods and Transportation Modes

Rancon Industrial Solutions Limited uses its own logistics (transportation) to transport materials from warehouse to the destinations (project sites) most of the time but sometimes they go for third party logistics support to reduce costs. It depends for the returned materials from project. In most cases, the imported goods (heavy machineries like Chillers, VRF outdoor units and lifts) are moved to the project site from the port directly after clearing the customs and quality check. **Sea transportation mode** is used to bring imported goods from other countries/global brands. These imported items do not store at the warehouse as these require good amount of space and bulky in weight so it becomes tough to move frequently. Locally sourced items are required in every project for installation so it is easy to transfer items from central warehouse (Dhaka). Locally produced items are delivered to the warehouse by the suppliers. Except the import, the **road transportation** mode is used for all cases.

Scheduling and Tracking systems

Rancon Industrial Solutions Limited does not have any dedicated tracking system but they use their ERP to get current status of the shipments as much as possible for the

imported goods. For the delivery schedules and scheduling a career, they use their ERP and maintain a excel sheet at the same time. When they deliver items through third party logistics, they provide a tracking number to track the position of the delivered goods.

Inventory Classification

Rancon Industrial Solutions Limited uses **ABC Analysis** for classifying the inventory in different categories to prioritize the inventory and set actions to initiate.

6.5. ABC Analysis of the Rancon Industrial Solutions Limited's Inventory

The ABC classification of inventory categorizes inventory items depending on their importance. The ABC analysis categorizes inventory into three categories: "A" category goods are the most significant, while "C" category items are the least important. The ABC analysis can help to determine what items of inventory should be prioritized in regards to inventory levels and reordering. It might also help businesses to decide what parts of inventory are most critical for the business to track and manage.

ABC analysis is very much important to find the value of inventory category wise. 'A' category goods are extremely vital to an organization. These goods are the items which consists of much weight compared to other products. B category goods are important but not more important than the A category. Finally, C category goods are less important than B category goods.

Rancon Industrial Solutions Limited organized its inventory into three categories such as:

- A Category items
- B Category items
- C Category Items

A Category Items

A category items are expensive and management have a tight control over these items. This category includes different types of components, technology and electronics equipment like HVAC indoor and outdoor units, Lifts, motion sensors, PCB boards, compressors, LED panels etc. Most of the imported items are included in this category. These are considered high value items but occupy a small number in term of quantity. These items consist of tight inventory control.

B Category Items

B category items are those that fall between the high-value A category and lower value C category items. They are moderate in both value and quantity, often representing a middle ground in terms of consumption and importance. These items may include different types of components such as solar panel, chiller parts, Brazing rod, exhaust fans, various maintenance tools different types of office equipment, spare parts and many others. These items require less inventory control.

C Category Items

C category items are those items that contribute a small portion of the overall value of the inventory but make up the largest proportion of the total number of items in quantity. They are low-value and high-quantity items that typically require the least amount of management effort compared to A and B category items. This category items include most of the locally sourced goods and materials such as rubber insulation, PE foam, GP Sheet, Nut bolt etc.

ABC classification is very much important to understand or to classify the inventory of the organization into different categories. Company focuses on A category items more than B category items and C category items are less important but they are used in massive amounts.

ABC Analysis

Generally, the following scenario is being seen during the ABC analysis of inventory

A Category items consist of 20% of total SKU and hold 70% of annual usage value.

B Category items consist of 30% of total SKU and hold 25% of annual usage value.

C Category items consist of 50% of total SKU and hold 5% of annual usage value.

ABC Analysis of the Inventory

Products are categorized based on the cost incurred to purchase the specific item.

Rancon Industrial Solutions Ltd

Stock Item Closing Report

Warehouse: General Store **As on Date:** 30th November 2025

SKU No	Item Code	Item Name	Brand Name	Item Specification	Annual Usage (Quantity)	Unit Cost	Annual Usage Value	% of Total BDT Usage	Category
1	SODCO007	AM340AXVANC/EA	Samsung	Outdoor	22.0000	920,524.94	20,251,548.73	24.69	Category A
2	---000159	ARUN320LTN5	LG	Outdoor	26.0000	875,866.78	22,772,536.35	27.77	Category A
3	SODCO001	AM220AXVANC/EA	HISENSE	4-Way Cassette Mini	20.0000	680,108.80	13,602,176.00	16.59	Category A
4	SODHP003	AM260HXVAGH/EU	Samsung	CASSETTE - 4 Way Wind-Free	12.0000	376,802.87	4,521,634.46	5.51	Category B
5	SOECO021	AM220AXVANH	LG	4 Way Casette Type Indoor Units	15.0000	344,801.91	5,172,028.65	6.31	Category B
6	SODCO027	MIM-B18N	Midea	Outdoor Branch	14.0000	280,958.00	3,933,412.00	4.80	Category B
7	SODCO029	MIM-D00AN	LG	VRF Fresh Air Intake Unit	16.0000	157,159.00	2,514,544.00	3.07	Category B
8	OTH-000037	Exhaust Fan-100CFM	HISENSE	4-Way Cassette Units	18.0000	123,500.00	2,223,000.00	2.71	Category B
9	---000066	FXMQ100PBV1	Daikin	Outdoor Unit	25.0000	54,512.97	1,362,824.30	1.66	Category B
10	---000067	FXMQ80PBV1	Daikin	Indoor	3.0000	51,220.64	153,661.91	0.19	Category C
11	SOECO041	FXDQ40NDVM	Samsung	360 Cassette Type Frame	3.0000	44,409.28	133,227.83	0.16	Category C
12	SOECO042	FXFSQ80ARV1	Midea	Remote - Sensor	3.0000	36,294.55	108,883.64	0.13	Category C
13	IDU-000024	Model: AVBC-48HJFKA	Toshiba	HVAC - Auto Detection Sensor	34.0000	28,106.27	955,613.14	1.17	Category C
14	SMSP003	AM128ANMPKH/EU	Daikin	PANEL - 4 Way Wind-Free Mini	7.0000	16,403.05	114,821.38	0.14	Category C
15	SYJ005	MXJ-YA3419M	Samsung	Wired Remote Controller	54.0000	14,747.99	796,391.26	0.97	Category C
16	RG001	R-32/R-410A Refrigerant			92.0000	10,094.04	928,651.43	1.13	Category C
17	AD001	Adhesive	SWAN		57.5000	6,943.00	399,222.50	0.49	Category C
18	BODCO013	17F04393A	HISENSE	EXPANSION VALVE	6.0000	5,252.91	31,517.45	0.04	Category C
19	CP001	1/1-1/4 in Copper Pipe			118.0000	1,200.00	141,600.00	0.17	Category C
20	CSP007	25.4mm / 1 in Copper Straight Pipe			223.0000	912.00	203,376.00	0.25	Category C
21	NR006	22.2mm / 7/8 in Rubber Insulation			504.0000	549.00	276,696.00	0.34	Category C
22	TDB001	9/64 in Twist Drill Bit			1,221.0000	503.00	614,163.00	0.75	Category C
23	GPS004	24 BWG GP Sheet			3,238.0000	135.00	437,130.00	0.53	Category C
24	PEF007	20mm PE Foam with Aluminum Foil			1,810.0000	125.00	226,250.00	0.28	Category C
25	NB001	Nut Bolt with Washer 3 inch			1,610.0000	85.00	136,850.00	0.17	Category C
							82,011,760.03	100.00	

Figure 15: ABC Analysis of the Inventory for Rancon Industrial Solutions Ltd.

A - Category: Most of the BDT of the total annual BDT usage has been used to purchase items of this category.

B - Category: Neither most nor little BDT of the total annual BDT usage has been used to purchase this category items.

C - Category: Comparatively a minimum BDT of the total annual BDT usage has been used to purchase this category items.

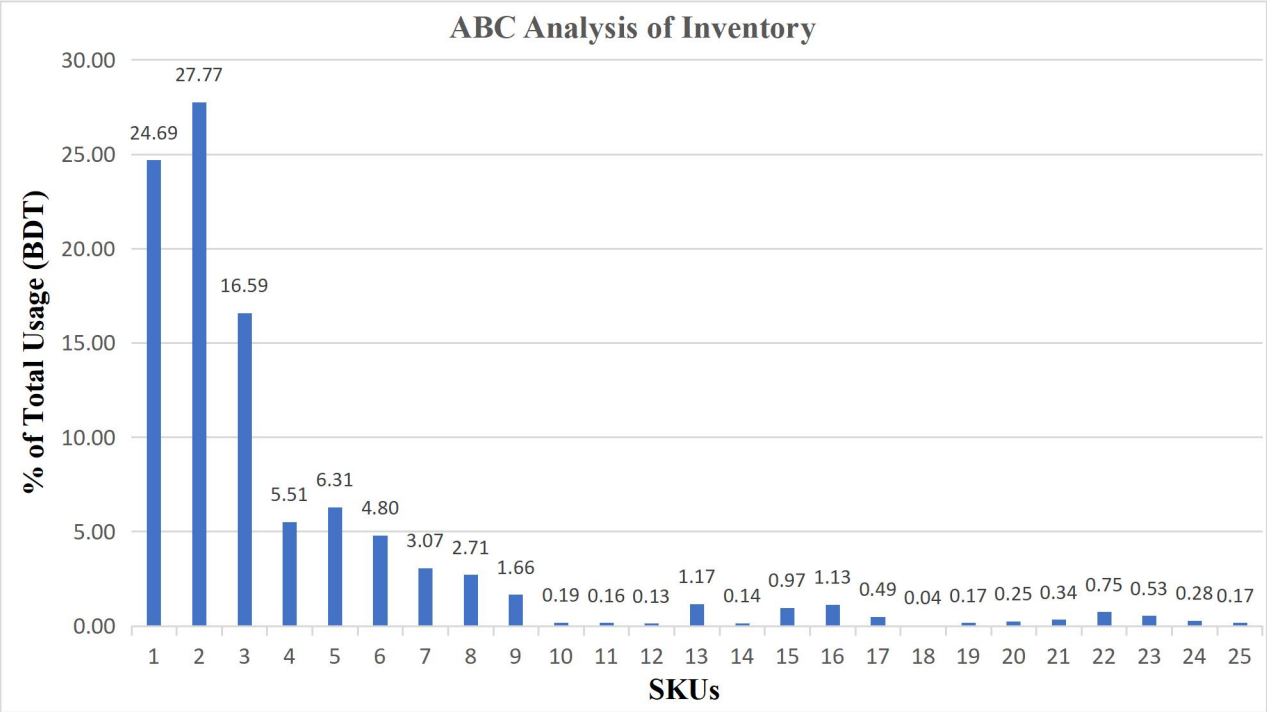

Figure 16: Histogram Chart- Percentage of Total BDT Usage for Inventory

Categorization of the 25 SKUs:

Table 1: ABC

Category	SKUs	Count	% of Inventory in SKU	% of Total Investment
A	1, 2, 3	3	12%	69.05%
B	4, 5, 6, 7, 8, 9	6	24%	24.05%
C	10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25	16	64%	6.90%
	Total= 25	25	Total= 100%	Total= 100%

Warehouse Processes

The warehouse operations are done more or less by using ERP. The warehouse processes that followed by Rancon Industrial Solutions Limited are mentioned below:

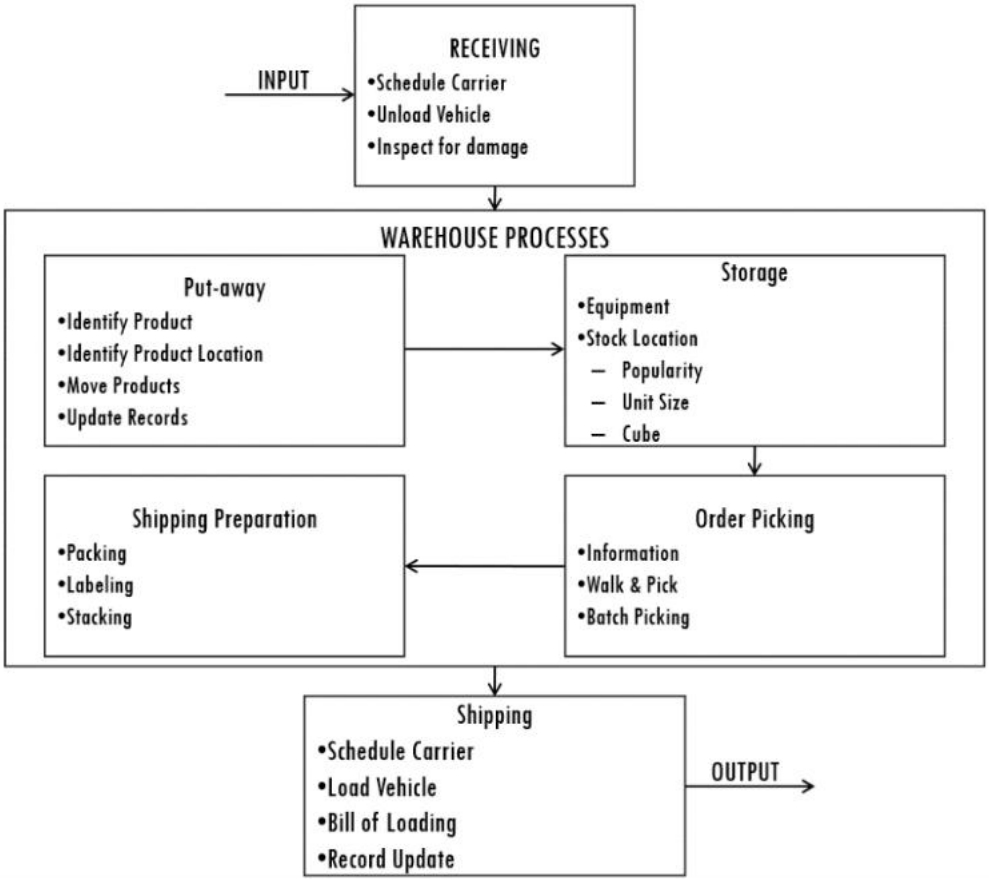

Figure 17: Warehouse Processes of Rancon Industrial Solutions Ltd.

Receiving: This process is started with unloading the vehicle which is sent by the supplier. Receiving and inspection of received goods are done manually by warehouse in charge.

Put Away: Then identifying the products and match with the supplier invoice then moving the products to their assigned space with proper labeling and scanning. After that the inventory has been updated according to the received quantity by scanning the labels which were attached to the materials. Generally, this labeling with barcodes is

used for expensive and imported goods such as sensors, indoor or outdoor units, remote controllers, remotes, PCB board etc.

Storage: Then the storing process get started by keeping the materials in the shelves or their dedicated space based on the importance, size of the product.

Order Picking: Materials are picked based on the requisition of materials provided by the supply chain department. Orders are picked by scanning the material barcodes but it is not required for the locally sourced and regular materials.

Shipping Preparation: Packing, labeling and gathering the picked materials in order to ship those in the project site.

Shipping: After completing the shipping procedures when the carrier is scheduled, the materials are ready to be loaded in the vehicle to transport to the site. Then the inventory record is being updated.

Warehouse Layout

This following layout is followed by Rancon Industrial Solutions for operating the warehouses. The warehouses of RISL are separated into multiple sections which help to enhance the productivity. To run the warehouse processes and operations smoothly, RISL follows the following layout for efficient and effective warehouse management.

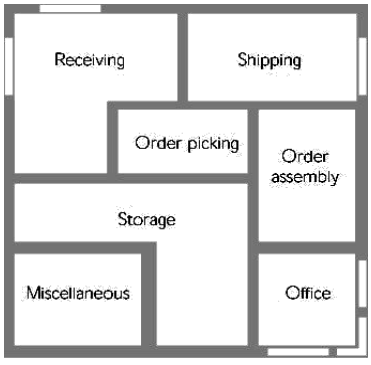

Figure 18: Warehouse Layout of Rancon Industrial Solutions Ltd.

An **office room** space is in front of the warehouse. Then comes the huge spacious area with double height for storing goods. The **storage area** is divided in many portions with the help of big shelves where goods are kept. Heavy and big size materials are kept on the floor. There is a space called **miscellaneous** to store the faulty and damaged items for replacement or claim warranty. Then comes the **order picking** section which is connected with the **order assembly** section. Finally, the **receiving** and **shipping** areas are located at the backside of the warehouse and divided by a wall. Shipping area is directly connected with the order assembly section.

Chapter 7: Internship Experience at Rancon Industrial Solutions Ltd.

7.1 Position, Duties, and Responsibilities

I was thankful for the opportunity to work for Rancon Industrial Solutions Limited. In our country, Rancon is one of the biggest group of companies and RISL is the market leader in the Electrical and Engineering Services sector. Their reputation is growing day by day. Basically, I was assigned to the Supply Chain Department in Corporate Head Office, located at Bijoy Sarani. The Supply Chain department is one of the key business drivers, playing a vital role in establishing the business in the market to increase growth in company's asset and profitability. Throughout my internship period I was worked directly under Manager, Head of Supply Chain, **Md. Shariful Islam**. I am even further lucky to also get direct guidelines from the Assistant General Manager of Rancon Holdings Division, **Mr. Masbah Mahbub**.

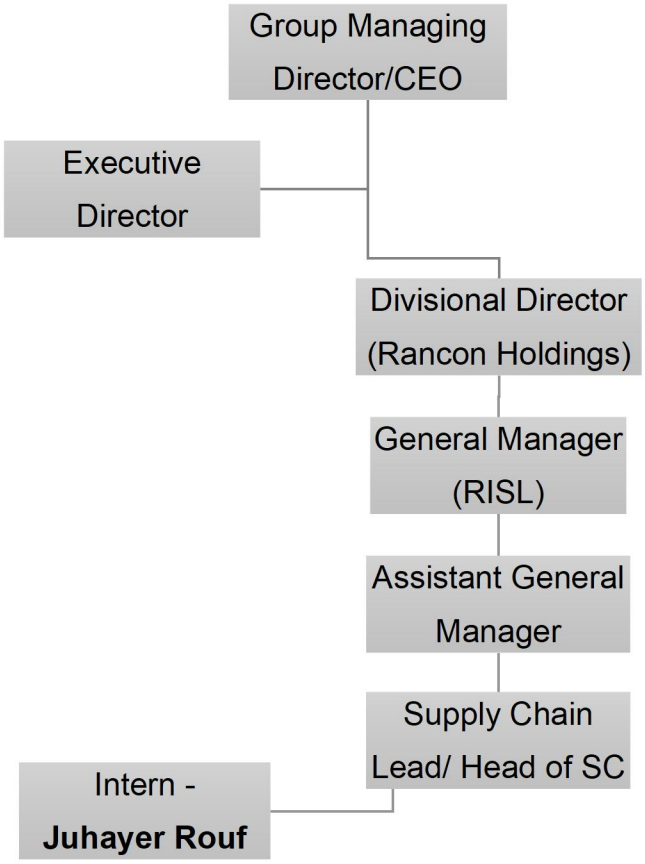

Figure 19: My Position as an Intern at Rancon Industrial Solutions Ltd.

As an intern, I worked for 13 weeks in the **Supply Chain** department at Rancon Industrial Solutions Limited. During my internship, I was in charge of assisting the primary Supply Chain team for vendor onboarding, procurement process, inventory allocation, product enlistment, keeping the warehouse inventory record. Most of the tasks were performed by the ERP system (ERPonTheNet).

My key duties and responsibilities that I used to perform are given below:

1. Preparing Supplier Bill Payment Requisitions and Maintaining Record of Suppliers' Approved Bills

Creating bill payment requisitions for vendors/suppliers according to the term and conditions in the followed template. If advance is required then preparing advance bill payment requisition. This task can be performed in two ways manually and through ERP. Both requisitions are attached with the Issued Purchase Order for payment reference. Generally, advance payments are consisting of 30% to 35% of total PO value varies supplier to supplier and rest of the amount is paid after delivery.

ERP generated online requisitions are submitted in the project management module. After the approval from upper management (Divisional Director, General Manager, Head of Technical, SCM Lead) on the paper, the hardcopies of the requisitions are being submitted to the Finance and Accounts department and entering the approved bill payment detail (supplier name, payment type and payment amount, due date) in the suppliers' payment log of Accounts manually.

2. Comparative Statement Analysis

Generally, I assisted my line manager to do the analysis several times for selecting appropriate supplier. This analysis is based on the provided quotations from the suppliers. For local purchases, suppliers used to provide a massive list with their final pricing and product description. I need to sort the provided data from suppliers based on the same specification of an item. RISL selects suppliers based on the price factor most of the time. It was done using Microsoft Excel most of the cases because using ERP

system to do the analysis makes it very complex. For imported goods, a senior executive was assigned for this task.

3. Issuing Purchase Orders (POs)

Issuing purchase orders for local purchases, was a regular task for me. There were more than 15+ ongoing projects of Rancon Industrial Solutions Ltd during my internship tenure, so for those projects I had to issue purchase orders according to the requisitions. Sometimes multiple purchase orders are placed to a same supplier time to time.

In order to do this task, I always used ERP system and its **purchasing module.** It helped to generate automated POs and send it to the suppliers preferred channel for ordering goods. Many times, I had to make calls to the suppliers to remind about the quantity and delivery date. During the preparation of a PO, I had to be careful about the right supplier, quantity, rate (which is collected from final quotation), terms and conditions for that specific supplier. System generated PO is attached with supplier bill payment requisition automatically using reference number but I had to attach the supplier bill payment requisition with the printed copy of PO for manual approval.

4. Doing GRN (Goods Received Note) for Received Materials

Creating GRNs for received materials at warehouse was a regular task of mine. As ordered goods are delivered to us in multiple shipment from a same supplier so that I had to do partial GRN as well. GRN was done against the Purchase Order. I always did this task using the physical MRR (Material Received Register) copy provided by the warehouse in charge because MRR contains the exact quantity of goods which were received.

Additionally, I had to go to the central warehouse once a week which is located at Tejgaon to assist in stock verification to check that exact materials were delivered at warehouse or not by the supplier. It was done by matching the warehouse product

nature with the product description of PO. I used to assist in keeping the inventory record updated.

5. Generating Transfer Orders

I had to issue transfers orders against the delivered goods from the warehouse to the site (project) on a regular basis. It is done when materials are transferred to the project and received at the site successfully. It is used to allocate and deduct materials from inventory.

This task is done by using ERP system and inventory module. After every successful generated GRN, inventory quantity is updated. Then delivering of items to a project needs to be deducted through issuing transfer order under a project. It is done project wise.

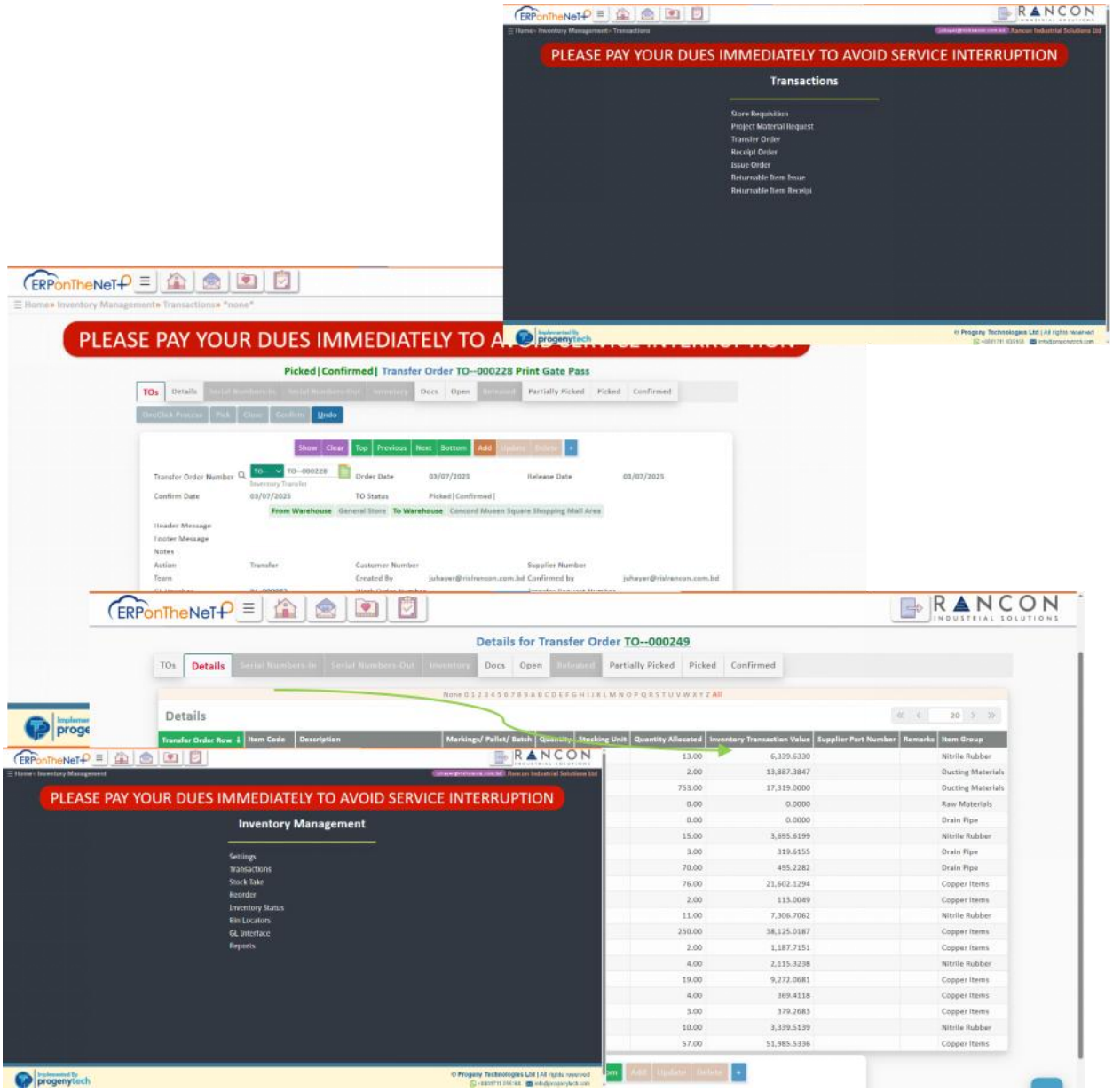

Figure 20: Transfer Order Creation Process in ERP

6. Onboarding Vendor or Supplier

This process is totally automated and done by using ERP. This process is followed by RFQ (Request for Quotation), Negotiation and Supplier Selection. Onboarding a supplier means enlist the details of the supplier or vendor and create a profile of that supplier in the ERP system so that it can be considered in future for further purchases.

This task was done by me only a few times because most of the vendors are already enlisted and Rancon Industrial Solutions Limited rely on the previous enlisted suppliers and vendors. This task is done with the help of Cross Application module in ERP. The required information was provided to including their price/rate to perform the task. This following information (given in the picture of ERP) was required to enlist a new supplier.

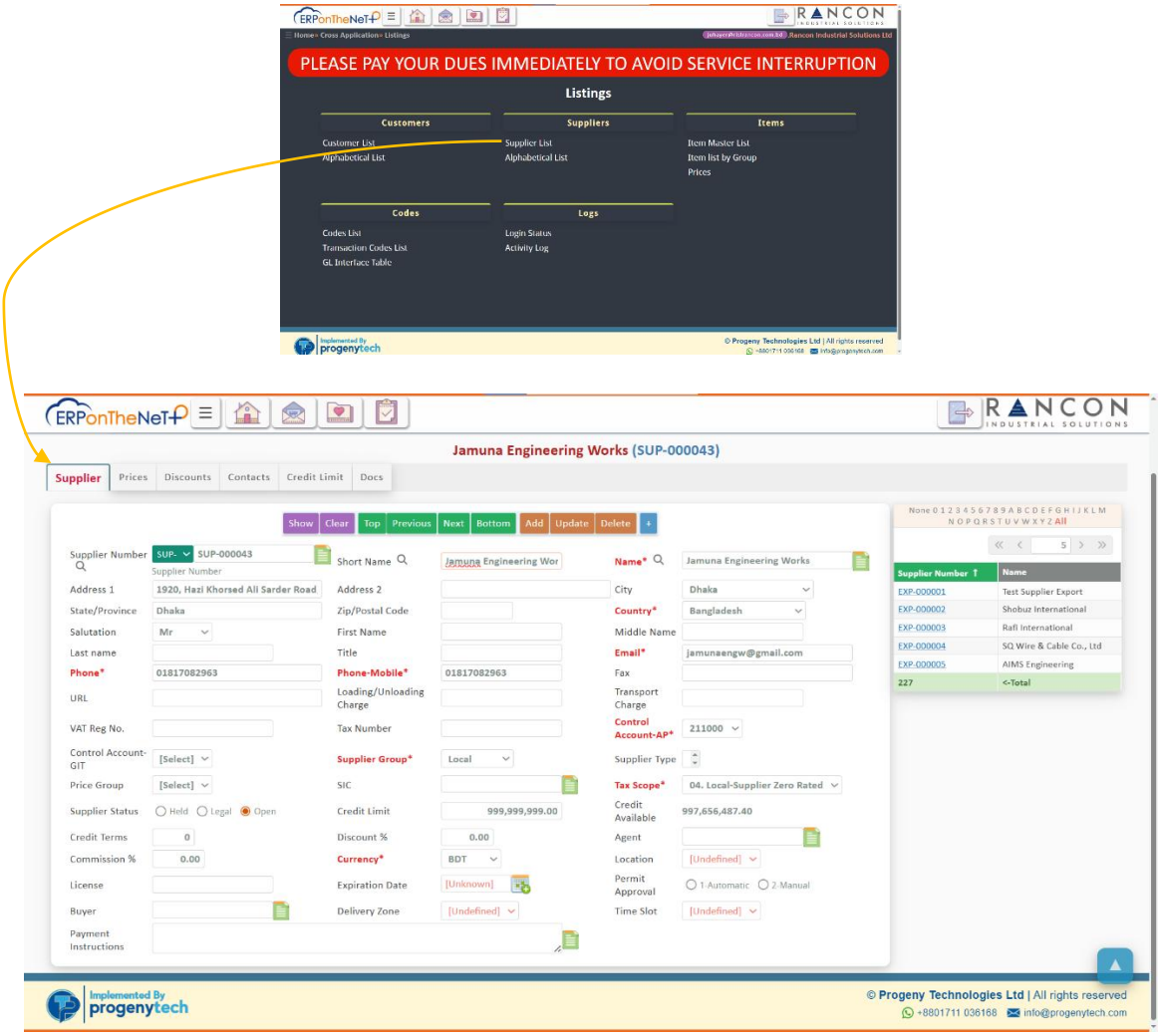

Figure 21: Supplier Onboarding Process in ERP System

7. Creating Product Codes with Necessary Details

This task was done by me several times through using ERP system. When a new product is required to order which is not available in the product list or a similar product is replaced by a new one then I need to create new product code and generate a profile for the new product with the necessary detail. The details need to be collected from the

design team. Here, some of the information supplier profile is added (who can provide this type material).

Product or item codes can be generated automatically or it can be named as our preference. If we go for the auto product code selection then system generate a item code with the reference of the product details like its name and size. If there are similar product with same name then system automatically added numerical digits after the initial. This task is also performed through Cross Application Module. The following details are given in the picture which are required to create a new item profile against a new product.

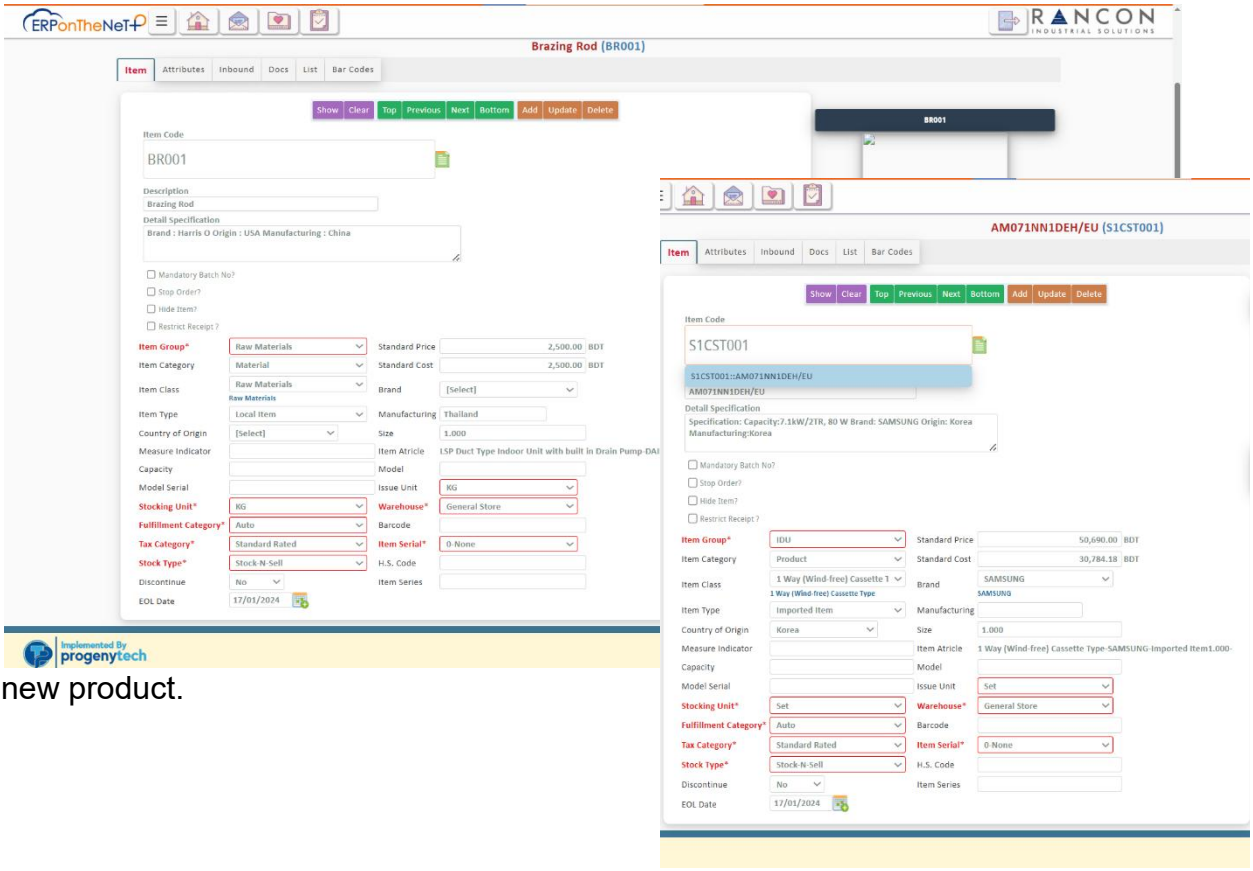

Figure 22: Item Code Creation Process in ERP

8. Creating Ageing Schedules of Warehouse Inventory

I was responsible to prepare Ageing schedules based on the different categories of inventories twice a month. The **Aging Schedule for Inventory** is done to generate a

report that categorizes and identifies the available stock based on how long it has been sitting in the warehouse.

It is prepared through using Microsoft Excel. The schedule is divided in several columns according to the quarters from the receiving date of a material. It helped to take decisions regarding the use of old purchases/stock when there is no specific requirement from the client about the recent manufacturing. It saves time to continue a project rather than waiting for procurement process to be happened.

Training & Development

All the interns from all the departments were provided an extensive orientation on first week of joining, which took place at Rancon Industrial Solutions Limited (placed Rangs Bhaban, Head office). We were informed by the HR about the work culture, the ethics and compliance we had to abide by, the locations of different activities, etc. After the orientation, I have been assigned to the Supply Chain department.

My line manager happened to be a very kind and supportive mentor to me and the executive of my department trained me a whole week before I got into the actual work. After a few days of re-learning Microsoft excel, getting used to the software by Progeny Technologies used at RISL, I dived down into the work. In the midst of any new work, there was constant support and learning from my seniors, and I prevailed to learn and implement new things simultaneously.

In the overall internship period of 3 months, I have gone through some technical training regarding the ERP system led by the Head of IT Md Ashif Ullah. These trainings were included Data Skimming, Use of ERPonTheNet, and ERP operations of supply chain through ERP software.

Contribution to Organization and Departmental Operations

My department (Supply Chain) tends to be the most crucial department comparing with the other functional departments at RISL. Thus, we all under the department have to work sincerely with proper dedication in efficient and smart ways. We all knew that a

single mistake can ruin a whole project and profit margin. So, I had to discuss every single matter with my seniors.

My work and role can be described as the coordinator. I always had the priority to assist in operations of the department. If there were any miscalculations or wrong inputs anywhere made by anyone, it would become visible to me when I cross-verified all the amounts and quantities before putting in the ERP software. As per the mistake, I would then have to inquire the appropriate colleague on how to rectify and re-update it again because I had to work with 100% accurate data.

Evaluation of Internship Performance

Working as an intern at Rancon Industrial Solutions Limited, I sometimes worked well and sometimes did some mistakes. I tried to focus and give entire attention on my work, and everyone admired it. Even when I made mistakes, the seniors encouraged me. My contacts with other employees were remarkable, and my line manager also appreciated me as well. My supervisors and seniors have supported and constantly complemented me about my work ethics and dedication and it was only possible because of my self-motivation and eagerness to learn. The HR had good perception about me as he had direct oversight on my performance and activities.

During the whole tenure of my internship, I have successfully completed and submitted all the tasks and responsibilities I had been assigned even after doing mistakes. Working smartly is important alongside working hard so I used to create a timetable for myself so that I could be more efficient/productive and get the best achievable results.

Skills Applied

I had very specific responsibilities as an intern at Rancon Industrial Solutions Limited. There, I used my knowledge of Microsoft Word, Microsoft PowerPoint, and Microsoft Excel. The skills of using ERP software that I developed through my SCM 4202

(Enterprise Resource Planning) course, assisted me with working at a fast pace, analysis and adapt the new software functions quickly and effectively.

The other skills that helped me a lot are –

- Presentation Skills.
- Data Visualization and Interpretation Skills.
- Active Communication (Listening and Speaking) Skills.

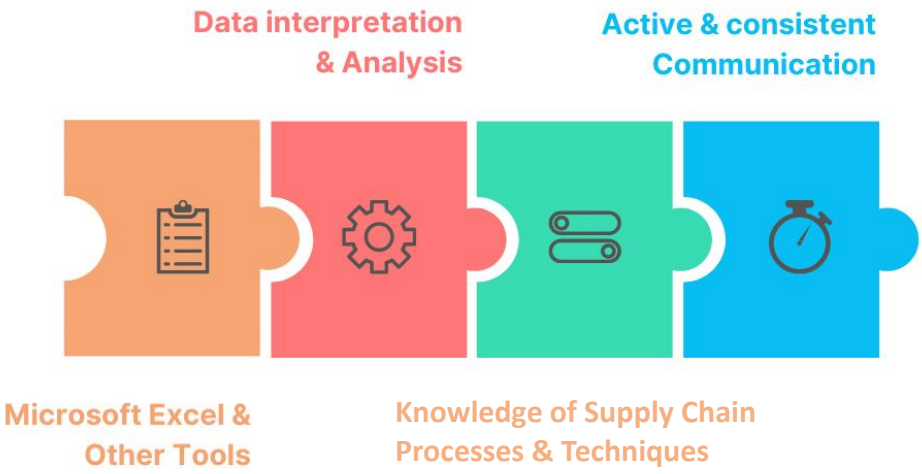

Figure 23: Applied Skills of Mine During My Internship at RISL

I have gained those skills for the majority of my academic purposes. As a result, it was very easy for me to adapt to the workings of the Supply Chain department at RISL. But alongside those, communication skills, time management skills were also important in order to be more productive.

4.6 New Skills Developed

These following technical and soft skills, I have attained and developed through active learning during my internship period

Fortunately, I have had the opportunity to use ERPonTheNet and other inventory management services software as I worked in the Supply Chain Department, which was a huge learning for me. The value of learning these softwares, with the other soft skills

that I developed, cannot be measured through any matrix or KPIs (Key Performance Indicators).

Chapter 8: Recommendations and Conclusion

8.1 Recommendations

Rancon Industrial Solutions Ltd is doing business more than one decade. RISL is the fastest-growing and most well-known firm in the Electrical and Engineering Services industry. Though RISL does not require other's recommendations since Rancon Industrial Solutions Limited has its own workflow and operating the business in the most efficient and capable manner by the management, which helped them for being one of the market leaders of the industry.

RISL can initiate various important measures to improve departmental procedures. All the way, as an intern, I would like to recommend few areas by considering the use of ERP system where Rancon Industrial Solutions Limited can improve:

Fully Functional ERP Implementation

There are few modules left to integrate with the existing ERP system, so RISL should implement and develop the remaining modules (HR and Marketing) by the provider in order to make the system fully functional. Improve the Sales module functionality. Marketing module can help to recognize the market trend and demand.

Use of Digital Tools and Software for Logistics

The company can implement software for logistics and transportation management besides the ERP system and then integrate those with the existing ERP. If Rancon Industrial Solutions Limited brings this type of software then they can observe the real-time update of product movement which may lead to be more cost efficient.

Enhancing Inventory Systems

Though an inventory module is present already in the ERP system but the generated report formats are really tough to understand. It should be simplified and must include purchase history (supplier name, receiving date etc.). It can be easily done by the provider Progeny Technology.

Improving Efficiency of Dealer Distribution

A dealer portal or app can be implemented or developed to monitor the real time inventory level of some specific dealers (who provides critical materials) and which products take more time to be manufactured. This will enable to share updated information about product availability and shipment of dealers. It will be benefitted for both parties.

Long-Term Strategic Initiatives

RISL can invest more in **Digital Marketing** because not only it can be helpful to generate more leads and make people aware of the technology and industrial solutions but also inform them about the products and services.

Approach Towards the Dealership

As a well-known company with well-established supply chain, RISL may take the dealership of multiple international brands like Samsung, Daikin, Kohler, etc. They can be the authorized distributor of the global brands in the market as they have already good reputation. It will help to expand the business and reduce the dependency on imports.

Employee Development Programs

Employees should have access to more skill development programs and trainings.

Employee Consideration

Each individual in the organization should get special consideration by the authority. Every employee is a tremendous asset to company. In this setting, every employee is self-motivated. If there is more recognition and motivation, people will work with more dedication from their own positions.

These recommendations may help Rancon Industrial Solutions Limited to achieve sustainability and run the business more effectively.

8.2. Conclusion

Working at Rancon Industrial Solutions Limited was an amazing experience of learning and I was able to acquire a complete practical knowledge about the structural and operational processes of their supply chain. I had a complete overview on the core supply chain team of RISL and assisted them in their regular operational activities hand-to-hand. During my internship period, I got the opportunity to work as a team regarding product management, procurement, sourcing, inventory management, logistics, and distribution. I consider myself very fortunate to have been a part of such an organization which is one of the market leaders of the industry.

The internship was the bridge between my theoretical knowledge, which I acquired from university as a student of supply chain, and practical supply chain operations in the business organization. I have observed the overall supply chain operations of RISL very closely. I realized how significant an automated system is for daily operations in a business organization to increase efficiency, productivity and avoid possible errors.

However, the journey of businesses toward "Driving Excellence" is an ongoing process. It cannot be achieved within a short period of time. If the technical framework is established, the long-term sustainability and success of the business can be achieved. Once implementation of ERP was dream of companies but now it has become a common addition to the big corporations because of its affordability, efficiency, usefulness, and functionalities. ERP system really helps to transform the separated business activities into an integrated system.

The ERP implementation at RISL represents a bold step toward future-proofing the organization. It was never easy to implement an automated ERP system against the traditional approaches of operations. This transition towards the integration of resources was not only a technological upgrade but also a strategic move towards smooth business operations such as sourcing, procurement, inventory management, logistics and warehouse management, project management etc. It is proved that excellence can be achieved when human expertise and efforts are combined with integrated technology.

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Appendix: Definitions and Key Terms of the Report

The definitions of the key terms which were used to prepare this report are given below:

ERP (Enterprise Resource Planning)

ERP is a type of software that integrates a company's core business processes or functions, such as Finance, HR, Procurement, and Supply Chain operations, into a single, unified system.

RISL (Rancon Industrial Solutions Limited)

RANCON Industrial Solutions Limited, a concern of RANCON Group which is of the leading HVAC, Elevator and Display service and solution provider in Bangladesh.

HVAC Systems (Heating, Ventilation, and Air Conditioning)

Providing HVAC systems is one the core business operations of RANCON Industrial Solutions Limited.

VRF System (Variable Refrigerant Flow)

VRF is an HVAC technology that is used to control the amount of refrigerant flow to multiple indoor units. This technology is massively used by Rancon Industrial Solutions Limited.

LC (Letter of Credit)

A Letter of Credit (LC) is a financial document issued by a bank that guarantees a buyer’s payment to a seller which will be received by seller on time and correct amount for the purchase. It is massively used by Rancon Industrial Solutions Limited during international purchases from global brands like Samsung, Daikin, LG etc.

BNBC (Bangladesh National Building Code)

It is the primary legal and technical document that regulates building design, construction, and maintenance across Bangladesh to ensure the safety, health, and welfare of the public by setting minimum standards for structural integrity, fire safety, and disaster resilience under the authority of **Bangladesh Building Regulatory Authority (BBRA)**.

PI (Performer Invoice)

An invoice sent by exporter or specific brand which consists of product details and features, pricing of the product, shipping and logistics details, weight and volume and financial terms. RISL is used to receive Performer Invoices from global brands during import process.

GRN (Goods Received Note)

When the ordered items are received by firms then firms issue a received note which is called Goods Received Note. It is done against the issued purchase order and bill of materials.