Thesis Report

on

Natural Medicine Sourcing in Supply Chain Management: A Case Study on 'The IBN SINA Natural Medicine Ltd.'

Submitted by:

Syed Md Mominul Hasan

ID: MSCM2301028006

Program: MBA in Supply Chain Management (MSCM)

Major: Supply Chain Management

Department of Business Administration

Sonargaon University (SU)

Submitted to:

Department of Business Administration

Faculty of Business

Sonargaon University (SU)

Submitted for the partial fulfillment of the degree of
MBA in Supply Chain Management (MSCM)

Sonargaon University (SU)

Date of Submission: 07 January 2025

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Supervised by:

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Letter of Transmittal

January 07, 2025
Mst. Marium Akter
Lecturer
Department of Business Administration
Faculty of Business
Sonargaon University (SU)

Subject: Submission of Thesis Report on "Natural Medicine Sourcing in Supply Chain Management: A Case Study on The IBN SINA Natural Medicine Ltd.".

Dear Madam,
With most respectfully to state that I am pleased to submit my thesis report titled **"Natural Medicine Sourcing in Supply Chain Management: A Case Study on 'The IBN SINA Natural Medicine Ltd.".** This report is an essential part of my MSCM degree requirements, and I had the privilege of completing my Thesis at Natural Medicine Sourcing in Supply Chain Management under your guidance.

This report reflects the current Natural Medicine Sourcing and Uses Herbal & Natural Medicine industry practices essential for organizations in our country. I have made an effort to include relevant details while keeping the report concise.

I kindly request your assessment of this report. Your feedback would be greatly appreciated. Thank you for your time and consideration.

Yours Sincerely

Syed Md Mominul Hasan
ID: MSCM2301028006
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Declaration of Student

I am **Syed Md Mominul Hasan**, a student in the Master of Business Administration program with ID: MSCM2301028006 at Sonargaon University. I want to sincerely state that the report titled **"Natural Medicine Sourcing in Supply Chain Management: A Case Study on The IBN SINA Natural Medicine Ltd."** has been genuinely created by me. During the preparation of this report, I ensured full compliance with international copyright regulations. I also want to clarify that this report has not been submitted anywhere else for the purpose of obtaining a degree.

Yours Sincerely

Syed Md Mominul Hasan
ID: MSCM2301028006
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Letter of Authorization

I hereby confirm that the project report titled **"Natural Medicine Sourcing in Supply Chain Management: A Case Study on The IBN SINA Natural Medicine Ltd."** is a genuine effort by **Syed Md Mominul Hasan** the research was conducted under my guidance. I also affirm that, to the best of my knowledge, the content presented in this report has not been included in any other project report or dissertation that led to the award of a degree to any candidate earlier, whether in the same context or a different one.

Mst. Marium Akter
Lecturer
Department of Business Administration
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Acknowledgment

I would like to extend my gratitude for the invaluable assistance and sincere cooperation provided by various individuals in the preparation of this report. It's impossible to adequately thank all the wonderful people who directly or indirectly contributed to the successful completion of this report. I am deeply appreciative of their kind collaboration and support.

First and foremost, I would like to express my thanks to the divine power. Additionally, my foremost appreciation goes to my supervisor, **Mst. Marium Akter**, Lecturer at Sonargaon University (SU), for her crucial guidance, scholarly insights, and unwavering support throughout my study period.

Moving forward, I am grateful to Eng. S. M. Lutful Bari, Senior Manager & Head of Local Procurement, Ahmad Jabid Hasan, Senior Manager & Head of International Procurement, The IBN SINA Pharma Group, from whom I gained significant knowledge. I also extend special thanks to Administrative Head Sayed Amimul Ihsan, along with heartfelt gratitude to all the other individuals at IBN SINA Pharma Group main branch. I am thankful to the various staff members from different departments who generously contributed their valuable time and assistance in helping me gather data for this report.

Executive Summary

This report is based on **"Natural Medicine Sourcing in Supply Chain Management: A Case Study on 'The IBN SINA Natural Medicine Limited".** In today's dynamic business. This executive summary provides an overview of the critical functions and benefits of implementing a comprehensive system within an organization.

"The IBN SINA Pharmaceutical Industry PLC" is a highly regarded and established pharmaceutical Industry known for its commitment to 'Quality we assure' excellence in Health services. "The IBN SINA Pharmaceutical Industry PLC" one of the oldest Pharmaceutical Industry in Bangladesh around 40 years of professional experience and Pharmaceutical Industry ranking as one of the top Twenty Pharmaceutical at their last ranking done in December 2024 and it have grown from people health side to offer wide spectrum professional health services and have been able to establish a high level of goodwill among with their peers, top business community and above all, their clients. The IBN SINA Natural Medicine plant is equipped with the latest technological support in 2008 with a view to facilitate the best natural therapeutic service to the people. Within a very short time our natural medicine has achieved a goodwill and credibility of medical professionals and consumers for its efficacy and quality.

Effective material sourcing is the main part of a supply chain management successful. The Natural medicine sourcing and Procurement is designed to Supply chain processes, ensure smooth delivery goods and enhance overall smooth production.

This report provides an in-depth analysis of the natural medicine sourcing strategies and supply chain management practices within The IBN SINA Natural Medicine Ltd. The case study focuses on understanding how the company sources natural medicines, manages its supply chain, and addresses challenges related to sourcing and distribution. The report examines key factors such as supplier selection, quality control, cost efficiency, logistics, and regulatory compliance that influence the sourcing process.

LIST OF ACRONYMS

JIT	Just-in-Time
PD	Procurement Department
SG	Sourcing
RM	Raw Material
NM	Natural Medicine
ERP	Enterprise Resource Planning
SCM	Supply Chain Management
KPIs	Key Performance Indicators
BAMS	Bachelor of Ayurvedic Medicine & Surgery (Natural Medicine Practitioner)
BUMS	Bachelor of Unani Medicine & Surgery (Natural Medicine Practitioner)
INM	The IBN SINA Natural Medicine Ltd.
IPI	The IBN SINA Pharmaceutical Industry PLC

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Chapter: 01
Introduction

1.1 Introduction

The demand for natural and herbal medicines is growing globally, driven by consumer preference for sustainable and holistic health solutions. The Ibn SINA Natural Medicine Ltd. (INM), one of Bangladeshi leading Herbal & Unani companies, is a key player in the production of natural medicines sourced from both local and international suppliers. However, sourcing raw materials for natural medicines presents unique challenges, such as quality fluctuations, cost variability, ethical sourcing, and regulatory compliance.

Effective supply chain management (SCM) is crucial for addressing these challenges. For Ibn SINA, optimizing its sourcing strategies is essential to ensure consistent product quality, cost efficiency, and adherence to sustainable and ethical sourcing practices.

This study explores INM's supply chain practices in sourcing natural ingredients, aiming to assess their effectiveness in improving cost efficiency, supplier performance, quality control, and regulatory compliance. By identifying areas for improvement, the study will offer actionable recommendations to enhance sourcing strategies and strengthen INM's position in the growing natural medicine market.

The Ibn SINA Natural Medicine Ltd. (INM) is a prominent organization in the pharmaceutical sector, committed to the production of high-quality medicines and healthcare products. Known for its strong adherence to traditional healing principles as well as cutting-edge modern science, INM has established a unique position in the field of natural medicine sourcing. The company plays a key role in integrating herbal and natural medicines into mainstream pharmaceutical practices, offering a diverse range of products that blend the wisdom of ancient medicine with contemporary quality standards.

The Role of Natural Medicine in INM's Product Line

Natural medicine forms an integral part of The Ibn SINA Natural Medicine Ltd.'s portfolio. The company specializes in sourcing and utilizing natural ingredients such as herbal extracts, essential oils, plant-based compounds, and minerals to create remedies that promote health and wellness. These natural-based products range from herbal capsules and tablets to ointments, tinctures, and dietary supplements. This approach reflects the growing

global interest in alternative medicine and holistic healthcare solutions, while ensuring that each product meets the highest standards of quality, safety, and efficacy.

1.2 Background of the study

In recent years, the global demand for natural medicines and herbal products has risen significantly, driven by growing consumer interest in natural health solutions, alternative medicine, and holistic wellness. As part of this trend, pharmaceutical companies are increasingly incorporating plant-based remedies, herbal extracts, and natural compounds into their product lines. These remedies, which have been used in traditional medicine systems for centuries, are now being embraced by modern healthcare systems and consumers alike as part of a broader movement toward natural, sustainable, and ethically sourced health products.

One of the key challenges that companies in the Natural Medicine sector face in the production and distribution of natural medicines is the effective management of their supply chains. Sourcing natural ingredients such as herbs, plants, minerals, and other bioactive substances requires meticulous attention to factors like quality control, sustainability, regulatory compliance, and ethical sourcing practices. The complexity of these processes makes sourcing in the natural medicine industry different from that in traditional pharmaceuticals, where synthetic ingredients are more readily available and controlled.

INM, a leading Herbal & Unani company in Bangladesh, is an exemplary case in point. Known for its focus on combining traditional knowledge with modern pharmaceutical practices, INM has established itself as a significant player in the natural medicine and herbal product markets. The company has implemented comprehensive strategies for sourcing natural ingredients from both local and global suppliers. It also prioritizes sustainable sourcing and ethical practices to ensure the long-term availability of the plants and herbs it uses in its products.

1.3 Scope of the Study

The study of natural medicine sourcing in the context of supply chain management at Ibn SINA Natural Medicine Ltd. (INM) is of particular importance for several reasons:

- **Growing Global Demand for Natural Remedies**: As consumers increasingly seek natural alternatives to synthetic drugs, there is a surge in demand for herbal medicines, dietary supplements, and wellness products made from plant-based ingredients. Understanding how INM sources and manages these ingredients will provide valuable insights into how Herbal or Natural Medicine companies can effectively meet this demand.
- **Challenges in Sourcing Natural Medicines**: Sourcing natural ingredients for medicine is fraught with challenges, including seasonal availability, environmental factors, quality variations, regulatory hurdles, and the need for sustainable practices.
- **Sustainability and Ethical Practices**: Natural medicine sourcing often raises concerns about sustainability and ethical sourcing. The increasing commercialization of natural ingredients can put pressure on local ecosystems and indigenous communities. This study will explore how INM balances the need for high-quality raw materials with sustainable harvesting, fair trade, and social responsibility.
- **Integration of Traditional Knowledge with Modern Supply Chains**: INM is unique in that it combines traditional healing practices rooted in herbalism, Ayurveda, Unani and Traditional Chinese Medicine with modern supply chain management practices. This integration offers a novel perspective on how ancient wisdom can be effectively combined with contemporary business models.
- **Regulatory Compliance and Market Expansion**: As natural medicine continues to gain popularity worldwide, companies like INM face the challenge of complying with increasingly complex regulations concerning natural (Unani) and herbal products. Understanding how INM navigates these regulatory requirements in the context of its supply chain management can offer insights into the complexities of global trade and compliance in the natural medicine market. Directorate General of Drug Administration (DGDA) are final authority in Herbal, Unani, Ayurvedic, and Natural medicine.

1.4 Objectives of the Study

This study aims to provide an in-depth analysis of INM's sourcing practices for natural medicines. Specifically, it will explore:

Broad Objectives

The key strategies employed by INM to source high-quality natural ingredients for its medicines.

Specific Objectives

- INM addresses challenges related to sustainability, quality assurance, regulatory compliance, and ethical sourcing in its supply chain.
- The company's approach to integrating traditional knowledge and modern supply chain management techniques.
- The role of supply chain management in supporting the company's commitment to ethical sourcing and community development.
- Recommendations for improving and scaling natural medicine sourcing practices, with a focus on sustainability, traceability, and fair trade.

1.5 Research Methodology

The internship report generally starts with visits and observation. However, in respective areas of the study different methods can be used where necessary. No single method appropriate for the report. This is a cost study both primary & secondary sources of data are used to complete study. These two sources are explained below-

Primary Sources

- Face-to-face conversation with the institution's officers and staffs.
- Direct conversation with the officers and staffs.
- Personal investigation with the officers and staffs.
- Study of different files of different section of the institution.
- Practical desk work.

Secondary Sources

- Annual Report of The IBN SINA Pharmaceutical Industry PLC
- Books, Manuals,
- Journals, Official Publications,
- Keeping Daily Diary,
- Primary Data
- Various Reporting Data & Raw Materials of the Organization
- Audited Report
- Browsing Internet
- Different Kinds of ICAB Books
- Different Articles,
- Unpublished Data Received from the Organization.

1.6 Limitations of the Study

- **Limited Generalizability**: The study focuses specifically on INM, making it difficult to apply the findings to other companies in different regions or with different operational models.
- **Data Availability**: Access to sensitive financial data, supplier performance metrics, and internal records may be restricted, potentially limiting the depth of analysis.
- **Subjectivity in Customer Feedback**: Customer surveys may introduce bias, as responses can vary depending on individual experiences and may not fully represent the broader customer base.
- **Challenges in Measuring Sustainability**: Quantifying environmental and sustainability impacts is complex and may lack standardized benchmarks, especially in the context of Ethiopian sourcing practices.
- **Limited Time Frame**: A short study period may not capture the long-term effects of sustainable sourcing practices or market shifts that influence sourcing strategies.
- **Regulatory Complexity**: Navigating multiple regulatory frameworks (local and international) may complicate the assessment of sourcing practices, especially with evolving regulations.

- **Supply Chain Variability**: External factors like weather, geopolitical issues, and raw material variability can disrupt the supply chain, affecting consistency in cost, quality, and delivery.
- **Bias in Data Interpretation**: Researcher bias in interpreting data (e.g., supplier performance or customer satisfaction) may influence results.
- **Lack of Comparative Data**: Limited access to external data from other companies in the natural medicine sector makes it difficult to benchmark INM's practices against industry standards.

Chapter: 02
Literature Review

2.1 Introduction

Natural medicine sourcing refers to the process of identifying, obtaining, and selecting raw materials, ingredients, or products for the production of natural medicines, remedies, and supplements. This sourcing typically involves the procurement of plant-based materials, herbs, minerals, and other natural substances that are used in traditional or alternative healthcare practices. It can also encompass sourcing from organic, sustainable, and ethically sourced suppliers to ensure the quality and efficacy of the natural products.

Key Elements of Natural Medicine Sourcing

2.2 Types of Natural Medicines

- **Herbal Medicines:** Extracts or whole herbs used in tinctures, capsules, or topical applications.
- **Essential Oils:** Concentrated plant extracts used for therapeutic purposes (e.g., lavender for relaxation, eucalyptus for respiratory support).
- **Homeopathic Remedies:** Substances diluted to trace amounts, used based on the principle of "like cures like."
- **Nutraceuticals and Supplements:** Natural substances, including vitamins, minerals, probiotics, and amino acids, used to support health.
- **Traditional Medicine:** Materials sourced for use in systems like Traditional Chinese Medicine (TCM), Ayurveda, Unani, and other indigenous healing practices.

2.3 Sourcing Methods and Criteria

- **Wild Harvesting:** The collection of naturally occurring plants, herbs, fungi, and other materials from their natural habitat. While wild harvesting can ensure the plant is native and possibly more potent, it requires sustainable practices to avoid overharvesting and ecosystem damage.
- **Cultivation:** The growing of plants specifically for medicinal use in controlled environments, either on farms or in greenhouses. Cultivation allows for more consistent quality and sustainable practices but requires land, time, and labor.

- **Wild crafted Ingredients:** This refers to plants that are not farmed but gathered from their natural environments, often with minimal disturbance to their ecosystems.
- **Organic Sourcing:** Many natural medicine products are sought after from certified organic farms to avoid synthetic pesticides, herbicides, or genetically modified organisms (GMOs).
- **Ethical Sourcing and Fair Trade:** Ethical sourcing involves obtaining materials in a way that respects environmental sustainability, supports fair wages and working conditions, and fosters community development. Fair trade ensures that producers in developing countries receive fair compensation for their goods.

2.4 Quality Control in Sourcing

- **Purity and Potency:** Natural medicines must meet high standards for purity, potency, and quality. Contaminants such as pesticides, heavy metals, or adulterants need to be strictly controlled.
- **Standardization:** For certain herbal medicines and supplements, it is important to standardize active ingredients to ensure consistent therapeutic effects. For instance, a specific percentage of active compounds like curcumin in turmeric or the alkaloids in ginseng.

- **Testing and Certification:** Many natural medicine products undergo testing by third-party laboratories to ensure they meet safety and efficacy standards. Certifications such as *Good Manufacturing Practices (GMP)* or *USP (United States Pharmacopeia)*, Bangladesh National Ayurvedic Formulary (BNAF), Bangladesh National Unani Formulary (BNUF), National Unani and Ayurvedic Formulary Committee - DGDA verification are commonly sought.

2.5 Sustainability in Sourcing

- **Conservation Efforts:** Many of the plants used in natural medicine are at risk of overharvesting, leading to ecosystem degradation or loss of biodiversity. Sustainable sourcing ensures that plants are harvested in ways that allow them to regenerate, and this may involve adopting harvesting practices that prioritize long-term ecosystem health.

- **Regenerative Agriculture:** Some companies focus on regenerative farming practices, which go beyond sustainability to restore soil health, increase biodiversity, and reduce carbon footprints.
- **Bioprospecting:** This involves the ethical exploration and collection of natural resources (often in biodiverse regions like rainforests) for the discovery of new plant-based medicines. It requires fair compensation for indigenous communities that may hold traditional knowledge of these plants.

2.6 Global Sourcing and Local Sourcing

- **Global Sourcing:** Due to the wide variety of natural ingredients used in herbal medicine, sourcing often takes place globally. Some plants or herbs may only grow in specific climates (e.g., ginseng in Asia, Echinacea in North America, or aloe Vera in arid climates).
- **Local Sourcing:** Many natural medicine producers prefer to source ingredients from local or regional suppliers to support local economies and ensure fresh ingredients. Local sourcing can also reduce the carbon footprint associated with long-distance shipping.

2.7 Challenges in Natural Medicine Sourcing

- **Supply Chain Transparency:** In natural medicine, the supply chain can be complex and opaque. Ensuring traceability from the source of the ingredient to the final product is crucial for maintaining product integrity and consumer trust.
- **Quality and Authenticity:** There is a growing demand for authentic natural medicine, but counterfeit or adulterated products are a concern. Sourcing from reputable suppliers and ensuring robust quality control is essential.
- **Regulatory and Legal Compliance:** Different countries have different standards for natural medicines, especially when it comes to health claims, safety, and ingredients. Compliance with regulations like *FDA* standards in the U.S. or *European Medicines Agency (EMA)* regulations is crucial.

- **Climate Change and Environmental Impact:** Changing climate conditions can affect the availability and quality of certain natural ingredients, leading to supply disruptions or price increases.

2.8 Ethics and Legislation

- **Sustainable and Ethical Harvesting:** Many organizations and regulatory bodies are advocating for the sustainable use of plant and mineral resources to prevent overharvesting and ecological degradation. Ethical sourcing ensures that local communities benefit from the commercial use of their natural resources.
- **Intellectual Property and Traditional Knowledge:** The ethical considerations around bioprospecting and the commercialization of indigenous plants and remedies are important. Many natural medicine sources come from cultures with longstanding traditional knowledge, and companies must navigate issues related to patenting, bio piracy, and compensation.

2.9 Examples of Sourcing Practices in Natural Medicine

- **Ginseng (Panax ginseng):** A highly sought-after herb in Traditional Chinese Medicine (TCM) and global herbalism. Ethical sourcing ensures that wild ginseng is harvested sustainably, often from regions where it is regulated or protected.
- **Turmeric (Curcuma longa):** Sourced from India, where it is grown and harvested primarily for its active compound curcumin, which is used in various medicinal and nutritional applications. Organic and fair trade certifications are often sought for turmeric.
- **Aloe Vera:** Sourced from arid regions and used in topical and oral formulations for its anti-inflammatory and healing properties. Aloe vera cultivation is often done sustainably to meet the growing global demand.
- **Moringa Leaf Extract:** Moringa leaf extract Country of Origin China. Shelf life 36 months under the conditions above and in its original packaging
- **Isabgul Husk:** Psyllium Husk (Isabgul Husk) Country of origin India, Shelf life 24 months under the conditions above and in its original packaging.

- **Pumpkin Seed Extract:** *Cucurbita moschata Duch*, Country of Origin China. Shelf life 36 months under the conditions above and in its original packaging
- **Spirulina Extract:** *Spirulina platensis*, Country of Origin China. Shelf life 36 months under the conditions above and in its original packaging.

Chapter: 03
Organizational Overview

3.1 History

Abu Ali Abdullah IBN SINA was a Persian polymath who is regarded as one of the most significant physicians, astronomers, philosophers, writers and the father of early modern medicine. His 240 writings have survived, including 150 on philosophy and 40 on medicine. Important aspects of modern medicine are derived from his writings which have revolutionized medical A few visionaries of the newly independent Bangladesh undertook a grand plan to devote themselves to serve the humanity by embracing Ibn SINA's philosophy, ideology and spirit in health care so that it could be conveyed at the doorsteps of the general people as a pioneer of modern healthcare. Considering the great spirit of serving humanity, they decided to form a Pharmaceutical Industry to make a significant contribution to the health sector of Bangladesh. Now, "The IBN SINA Pharmaceutical Industry PLC" (IPI) is the view of that thought.

The IBN SINA Pharmaceutical Industry PLC has a time-honored background of about four decades as a medicine manufacturing company. Now, IPI has grown to be one of the leading companies in the pharma industry of Bangladesh.

The IBN SINA Pharmaceutical Industry PLC was incorporated on 22 December 1983 as a private limited Company and commenced its commercial production on May 1986.

Aiming for business expansion and mass public concerned the Company had been converted into a public limited company in 1989 and thereafter was listed in Dhaka Stock Exchange (DSE) on 17 July 1990 and Chittagong Stock Exchange (CSE) on 24 December 1996.

The Company is committed to making sustainability an integral part of continually enabling people in good health for better lives, improving environmental and social performance through mainstream operation of health services ensuring the availability of quality medicines in the light of technological advancement and new inventions which commonly refer to as our corporate footprint.

The Company's priority as a good corporate citizen is to earn money in an ethical manner that is both socially and ecologically responsible and obviously sustainable. "Quality We Assure" reflects the essence of our motto.

Nature is divine; the motto of the 21st century is "Back to the Nature" The IBN SINA Natural Medicine Ltd., a Subsidiary of The IBN SINA Pharmaceutical Industry PLC is dedicated to

serving humanity by manufacturing and providing quality medicines and services to its customers with marching onward for sustainable growth and continual improvement.

IBN SINA Natural Medicine plant is equipped with the latest technological support in 2008 with a view to facilitate the best natural therapeutic service to the people. Within a very short time our natural medicine has achieved a goodwill and credibility of medical professionals and consumers for its efficacy and quality. Following this trend most of the leading pharmaceutical companies have also started marketing of the natural medicine production. The growth is increasing day by day after starting its journey. IT has undergone potential expansion in multiple sectors due to its responsible business practices. The ranking of the natural medicine division is among the most important multidisciplinary groups and advocates for the principle of the care for the future, high professionalism, employee friendly approach, financial stability transparency, safety and leadership. It is striving to strengthen its market access in locally and globally. Formulating its competitive strategies and putting emphasis on productivity enhancement, thus playing a pivotal role in the country's commerce and trade sectors.



The IBN SINA Pharmaceutical Industry PLC was founded in 1983 on a campus of about 15 acres of land located in Kaliakoir, Gazipur district about 56 km away from Dhaka city. The Industry was established as a private limited company. Then it was converted into a public limited company in 1989.

IBN SINA TRUST sponsor of the industry, owns 44.67% share of the Company Institutions shares 24.07% and the public shares the rest 31.26%. The commercial production was started in May 1986 with only a few number of pharmaceutical dosage forms of products which has increased now more than 550.

Since the beginning IBN SINA was committed to providing high-quality healthcare services in Bangladesh and within a very short period of time it fulfilled its commitment. It has meanwhile occupied a credible position in the pharmaceutical field of Bangladesh for its quality and ethical standards.

Now IBN SINA is expanding its business arena internationally across the world and has already exported more than 100 products in different dosage forms to 20 Countries.

3.2 Vision

The IBN SINA Pharmaceutical Industry PLC's vision is to become a premier specialty pharmaceutical company, with a balanced focus in complementary therapeutic areas. Our primary responsibility lies towards the people of Bangladesh and ultimate responsibility towards humanity at large.

3.3 Mision

A publicly listed company working for the nation as a whole with pertinacious incitement and firm determination to ensure the quality and ethical standing attributing the sustainable growth and development to serve mankind.

3.4 Board Of Directors

Kazi Harun or Rashid, Chairman

Prof. Dr. A K M Sadrul Islam, Managing Director

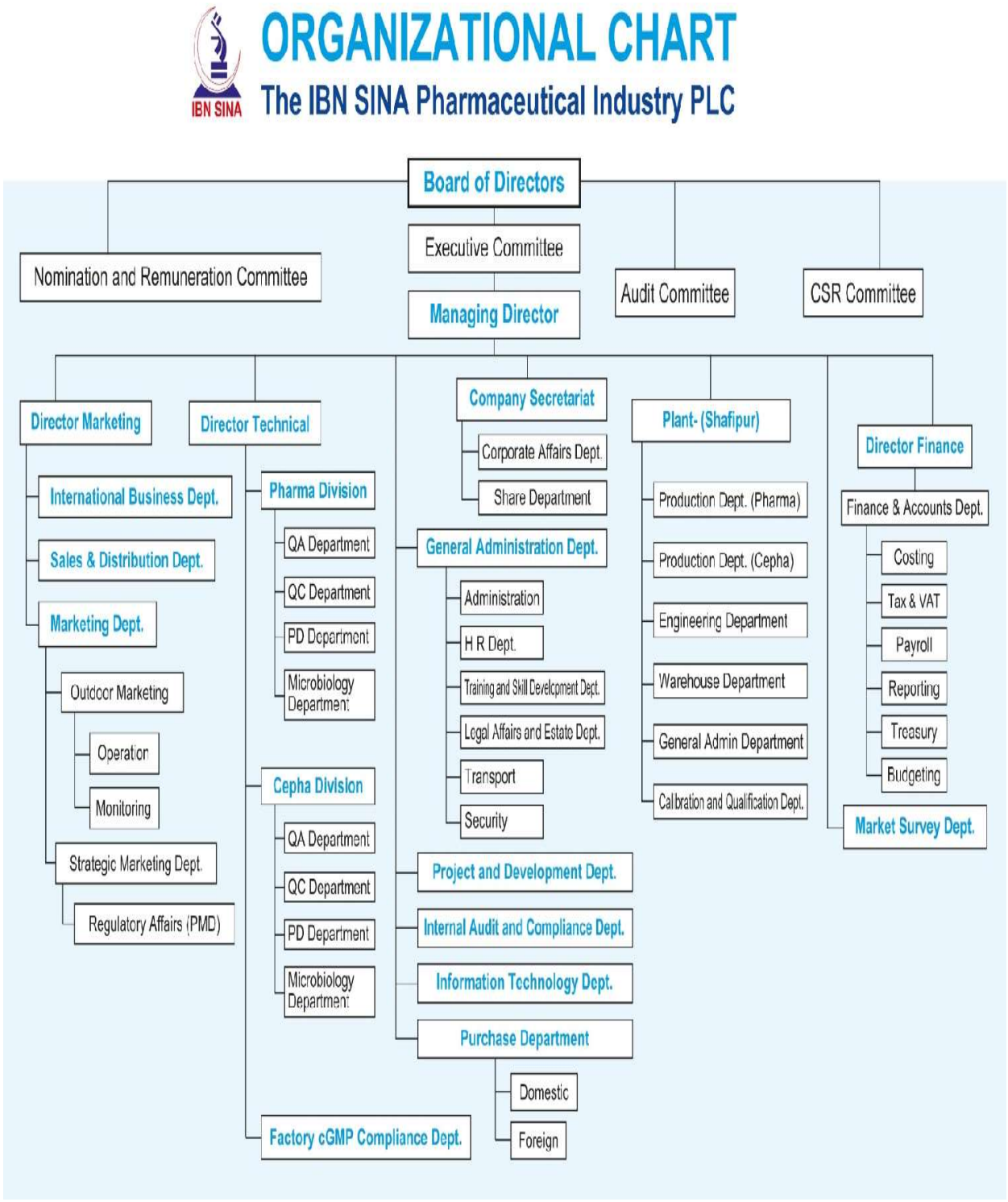
Prof. ANMA Zaher, Director

Prof. Col. (Retd.) Dr. Zehad Khan, Director

Dr. Mohammad Ayub Miah, Director

Md. Rafiqul Islam Khan FCA, Independent Director Md. Abdus Salam FCA, FCS, Independent Director Abdus Sadeque Bhuiyan, Independent Director

3.5 Organogram



3.6 Certification



3.7 The IBN SINA Natural Medicine Ltd. Products













3.8 Target goals of the Quality Control Department

For robust monitoring & control, maximum productivity and good service to its interested parties, the Quality Control Department has divided the following sections

- Analytical Science & Technology (AST)
- Supplier Approval & Control
- Packaging Materials
- Raw Materials
- Finished Goods
- On-going Stability
- International Business Development- IBD (Documentation)

3.9 Quality control department is engaged with the following processes.

- Packaging materials, production stationary & promotional items sampling, testing, release & labeling.
- API, excipients, cleaning agent, sanitizing agent and engineering chemical sampling, testing, release & labeling.
- Intermediate, bulk and finished product testing and reporting.
- Water testing and system monitoring.
- On-going stability study
- Supplier approval & control
- Supplier complaint management
- Internal documentation (SOP, Specification, Analytical method, Analytical worksheet, Logbook, raw data, audit trial data, reporting, archiving, backup, recording, trend analysis, etc.).
- Sample Management (Test sample, retention sample, stability study sample, source evaluation sample).
- Analytical method development & validation.
- Cleaning validation.
- People development (Analyst validation).
- Equipment purchase, qualification, calibration and maintenance.
- Primary and secondary reference standard management (Purchase, checking, preparation, storage & issue).
- Reagent and auxiliary items management (Purchase, checking, storage & issue)
- Laboratory waste management
- Specification & analytical method (Packaging, Raw & Finished)
- Solution preparation (TS, VS, Indicator, Buffer Solution)

Laboratory compliance management (CAPA, CC, Deviation, Lab Incident, Investigation, OOS, Data trending, Risk assessment, Audit, Data integrity Issue).

A modern and well-equipped QC laboratory has been set up for the pharma division. It ensures quality, safety, purity & efficacy of starting materials and verifies the quality of manufactured products considering quality, safety & efficacy.

It has a dedicated IBD section (Documentation) to give support for registering the products in overseas markets such as the United States of America, Venezuela, Guatemala, Myanmar, Sri Lanka, Cambodia, Vietnam, Laos, Kenya, Somalia, Afghanistan, Yemen, Mali, Bhutan, Georgia, Ghana, Mauritius, Senegal, Uganda and Zimbabwe.

Chapter: 04

Sourcing Process at

The IBN SINA Natural Medicine Ltd.

4.1 Supply chain mapping

The supply chain of The IBN SINA Natural Medicine Ltd. is a well-structured network designed to ensure the seamless sourcing, production, and delivery of high-quality natural medicines. The supply chain begins with the procurement of raw materials, including medicinal plants, herbs, and other natural resources, sourced from local and international suppliers. These raw materials are carefully selected to meet stringent quality standards, ensuring efficacy and safety in the final products. Once procured, the materials are transported to IBN SINA's production facilities, where advanced manufacturing processes integrate traditional herbal knowledge with modern technology. The finished products are then distributed through a robust network, including wholesalers, retailers, and pharmacies, reaching consumers across Bangladesh and beyond. The company also emphasizes backward integration by collaborating with farmers and suppliers to ensure sustainable and ethical sourcing practices. Additionally, logistics and inventory management systems are optimized to minimize costs and reduce lead times. The mapping of this supply chain highlights its strategic alignment with the organization's vision of delivering natural medicines efficiently while maintaining quality and sustainability. This integrated approach reflects IBN SINA's commitment to innovation, environmental stewardship, and customer satisfaction.

4.2 Supply chain network

The supply chain network of The IBN SINA Natural Medicine Ltd. is designed to effectively manage the end-to-end process of sourcing, manufacturing, and distributing natural medicines. The network is structured to ensure the availability of high-quality raw materials, primarily consisting of natural and herbal ingredients, which are procured from both local and international suppliers. IBN SINA emphasizes stringent supplier selection criteria to ensure the sustainability and authenticity of the sourced ingredients. The procurement process is closely integrated with their manufacturing units, which employ advanced processing technologies to maintain the potency and purity of the medicines.

The company's distribution network spans across Bangladesh, utilizing a combination of direct sales channels and partnerships with pharmacies, retailers, and healthcare providers to ensure timely delivery to end consumers. Advanced inventory management systems and

a centralized distribution hub enable IBN SINA to optimize stock levels and reduce lead times. Furthermore, the supply chain network is supported by robust quality assurance measures and compliance with regulatory standards at every stage, ensuring the safety and efficacy of its products. This integrated and sustainable supply chain network positions IBN SINA as a reliable provider of natural medicines, catering to the growing demand for herbal and alternative healthcare solutions in Bangladesh.

4.3 Major players in the supply chain

The IBN SINA Natural Medicine Ltd. operates a robust and streamlined supply chain network that incorporates multiple key players to ensure the efficient sourcing, production, and distribution of natural medicines. The supply chain begins with trusted raw material suppliers, who provide high-quality medicinal herbs, plants, and other natural ingredients essential for the formulation of its products. These suppliers are sourced both locally and internationally, adhering to strict quality control standards to maintain the purity and efficacy of the ingredients. Once procured, these raw materials are handed over to the company's internal production units, where skilled workforce and advanced technology combine to create a diverse range of natural medicines. IBN SINA also collaborates with logistics service providers to manage the transportation of raw materials to its production facilities and the distribution of finished products to wholesalers, retailers, and pharmacies across Bangladesh. Wholesalers and retailers play a significant role in bridging the gap between the company and end consumers by making products widely accessible. Additionally, regulatory bodies are critical players in ensuring compliance with national and international health standards, fostering trust in the brand. Together, these major players form a cohesive network that supports IBN SINA's vision of delivering high-quality natural medicines to its customers.

Natural Medicine Sourcing Practices

4.4 Types of Raw Materials Sourced

The sourcing of raw materials for natural medicine production at The IBN SINA Natural Medicine Ltd. follows a structured approach to ensure the highest quality and compliance with industry standards. The company primarily sources plant-based raw materials,

including medicinal herbs, roots, leaves, barks, and seeds, which form the core components of their natural remedies. These materials are often derived from indigenous and exotic plants known for their therapeutic properties, such as Neem, Tulsi, Ginger, and Turmeric. Additionally, they procure minerals, essential oils, and naturally occurring compounds like honey, aloe vera gel, and natural resins, which are integral to product formulations. Ensuring sustainability, the company collaborates with certified organic farms and suppliers, emphasizing eco-friendly practices and ethical sourcing. Raw materials are selected based on their potency, purity, and alignment with traditional medicinal principles. IBN SINA also incorporates rigorous quality control measures during procurement to eliminate contaminants, ensuring that the raw materials meet pharmacological and therapeutic requirements. This meticulous sourcing practice not only reinforces the efficacy of their products but also supports environmental conservation and the livelihoods of local communities involved in the supply chain.

4.5 Sourcing Locations (Geographic)

The IBN SINA Natural Medicine Ltd. strategically sources its raw materials from diverse geographic locations, prioritizing regions renowned for the abundance and quality of medicinal plants. Domestically, the company collaborates with suppliers from Sylhet, Chattogram Hill Tracts, and the Sundarbans region, which are rich in medicinal herbs such as neem, turmeric, and amloki. These regions offer favorable climatic and soil conditions that support the natural growth of high-quality plants, ensuring the potency and effectiveness of the final products. Internationally, the company sources specialized raw materials from India, China, and Southeast Asia, leveraging the rich heritage of traditional medicine in these regions. For example, essential oils, rare herbs, and other botanicals that are unavailable locally are imported to maintain consistency in production and quality standards. The company emphasizes sustainable sourcing practices, working with certified suppliers and fostering partnerships with local farmers and cooperatives. This ensures a stable supply chain while supporting the livelihoods of small-scale farmers. By adopting geographically diverse sourcing practices, The IBN SINA Natural Medicine Ltd. not only reduces risks associated with supply disruptions but also upholds its commitment to producing high-quality natural medicines that align with customer needs and global standards.

4.6 Supplier Selection Process

The supplier selection process for natural medicine sourcing at The IBN SINA Natural Medicine Ltd. is a critical aspect of ensuring quality and sustainability in their supply chain. The company follows a comprehensive evaluation procedure to identify suppliers who meet stringent quality standards, ethical sourcing practices, and cost efficiency. Initially, potential suppliers are assessed based on their ability to provide high-quality raw materials, with a particular focus on the purity, potency, and sustainability of the natural ingredients. This is followed by a detailed evaluation of the supplier's production processes, including certifications and compliance with local and international regulations for herbal medicines. The company also considers the supplier's reputation, reliability in meeting delivery schedules, and the flexibility to adapt to changing market demands. A supplier's commitment to ethical practices, such as fair trade and environmental sustainability, is also a key factor in the selection process. The final decision is made based on a combination of these factors, with ongoing monitoring and evaluation to ensure that suppliers maintain the required standards throughout the duration of the partnership. This thorough supplier selection process helps IBN SINA maintain the integrity and quality of their natural medicine products while fostering long-term, sustainable relationships with trusted suppliers.

4.7 Contract Management in Natural Medicine Sourcing Practices

Effective contract management is a cornerstone of natural medicine sourcing practices at The IBN SINA Natural Medicine Ltd. The company ensures clear, detailed agreements with suppliers, focusing on quality, delivery timelines, and regulatory compliance. These contracts specify the sourcing of raw materials, such as herbs and medicinal plants, ensuring they meet the required standards and are sustainably sourced. Contract terms also outline the responsibilities of both parties regarding payment schedules, dispute resolution, and penalties for non-compliance. Regular monitoring of contract performance is essential to ensure adherence to the agreed terms, with periodic reviews to address any issues or changes in market conditions. By maintaining strong contract management practices, IBN SINA can mitigate risks, reduce operational disruptions, and foster long-term, mutually beneficial relationships with suppliers, contributing to a reliable and ethical supply chain for natural medicines.

4.8 Quality Assurance in Sourcing

Natural medicine sourcing at The IBN SINA Natural Medicine Ltd., quality assurance plays a pivotal role in ensuring that the sourced raw materials meet the company's stringent standards for safety, efficacy, and sustainability. The company employs a comprehensive quality management system that includes strict vendor selection criteria, regular audits, and detailed inspection processes for incoming materials. This system ensures that raw materials, often sourced from organic farms or natural habitats, are free from contaminants, meet regulatory requirements, and align with ethical sourcing practices. The integration of third-party certifications, such as organic or fair trade certifications, further strengthens the company's commitment to delivering high-quality products. Additionally, The IBN SINA Natural Medicine Ltd. conducts regular testing and batch sampling to monitor the potency and purity of ingredients, guaranteeing that all products manufactured align with the company's commitment to excellence and customer safety.

4.9 Traceability methods

In the context of natural medicine sourcing at The IBN SINA Natural Medicine Ltd., traceability methods play a crucial role in ensuring the authenticity, quality, and safety of the sourced raw materials. The company employs a combination of digital and manual tracking systems to monitor the entire supply chain, from the collection of medicinal plants to the final product delivery. Barcoding and RFID technology are used to track batches of raw materials as they move through various stages of processing and storage. Additionally, detailed records are maintained for each supplier, capturing information such as cultivation practices, harvesting methods, and any certifications (e.g., organic or fair trade). Regular audits are conducted to verify these claims and ensure compliance with regulatory standards. This traceability system enhances transparency, minimizes the risk of contamination, and fosters consumer trust in the natural medicines produced by IBN SINA.

Challenges in Sourcing

4.10 Raw Material Availability and Consistency

The availability and consistency of raw materials are critical challenges in sourcing natural medicines, particularly for companies like The IBN SINA Natural Medicine Ltd. Sourcing raw materials from diverse, often remote locations increases the complexity of ensuring a steady supply. Environmental factors, seasonal variations, and regional scarcity can impact the availability of specific herbs, roots, and other plant-based ingredients. Additionally, the inconsistency in quality and supply of raw materials poses challenges in maintaining production schedules and ensuring product efficacy. Sourcing from multiple suppliers or local farmers further complicates the task, as variations in cultivation practices, harvesting methods, and handling can lead to fluctuations in raw material quality. This makes it difficult to standardize the production process and meet regulatory requirements. Effective supply chain management, including risk mitigation strategies and supplier relationships, is vital to overcome these hurdles and ensure a consistent supply of quality raw materials for the production of natural medicines.

4.11 Pricing Volatility

Pricing volatility is a significant challenge in sourcing natural medicines, particularly for companies like The IBN SINA Natural Medicine Ltd. Fluctuations in raw material costs, influenced by factors such as weather patterns, seasonal availability, and geopolitical tensions, often lead to unpredictable pricing. These variations disrupt budgeting and forecasting, making it difficult for companies to maintain stable profit margins. Moreover, price volatility affects supplier negotiations and can lead to supply chain disruptions, forcing companies to seek alternative sources or adjust their product pricing, which in turn impacts customer satisfaction and market competitiveness.

4.12 Supplier Relationship Management

In the context of the study on **"Natural Medicine Sourcing in Supply Chain Management" at The IBN SINA Natural Medicine Ltd.**, Supplier Relationship Management (SRM) faces significant challenges in sourcing. These challenges stem from maintaining strong, transparent communication with suppliers who may have inconsistent

production capacities, fluctuating quality, or logistical issues. Additionally, ensuring timely delivery of raw materials while managing costs and maintaining ethical standards is a constant struggle. The complexity of sourcing natural ingredients, with their seasonal availability and varying quality, further intensifies the need for effective collaboration and risk mitigation strategies in SRM to ensure a smooth supply chain.

4.13 Ethical sourcing issue

Ethical sourcing in natural medicine sourcing poses significant challenges, particularly for companies like IBN SINA Natural Medicine Ltd. Ensuring that raw materials are sourced responsibly requires rigorous monitoring of suppliers to guarantee fair labor practices, environmental sustainability, and the absence of exploitation. The sourcing of medicinal plants may also raise concerns regarding over-harvesting, leading to depletion of natural resources. Furthermore, navigating through the complexity of traditional knowledge rights and protecting indigenous communities' intellectual property presents another ethical hurdle. These issues highlight the need for transparent and accountable supply chains to maintain ethical standards while meeting market demand.

Technological Adoption in Natural Medicine Sourcing

4.14 Use of ERP system

The adoption of an Enterprise Resource Planning (ERP) system plays a crucial role in enhancing the efficiency and effectiveness of sourcing natural medicine within the supply chain. For The IBN SINA Natural Medicine Ltd., implementing an ERP system streamlines the entire sourcing process, from raw material procurement to finished product distribution. By integrating various functions like inventory management, procurement, and supplier relationship management, the ERP system allows for real-time tracking and better decision-making. It reduces operational costs, minimizes stockouts, and ensures that the sourcing process is aligned with demand forecasts. The system also improves communication between different departments and suppliers, facilitating smoother coordination and reducing the chances of errors. Ultimately, the ERP system enhances transparency, traceability, and accuracy in sourcing natural medicines, which is vital for maintaining quality standards and meeting regulatory requirements within the industry.

This technological adoption ensures the supply chain operates more efficiently, leading to better service delivery and customer satisfaction.

4.15 Digital Traceability system

Natural medicine sourcing, the adoption of a Digital Traceability System plays a crucial role in enhancing transparency and ensuring the quality of raw materials. By integrating advanced technologies such as blockchain and IoT, IBN SINA Natural Medicine Ltd. can track the entire journey of natural ingredients—from their origin in farms to their processing and final incorporation into products. This system not only boosts operational efficiency but also builds consumer trust by providing verifiable information on product authenticity, sustainability, and ethical sourcing practices. Additionally, the digital traceability system allows for real-time monitoring of supply chain performance, helping identify inefficiencies, potential risks, and areas for improvement. The technological shift toward digital systems is thus essential in modernizing the sourcing process, aligning with global standards, and reinforcing IBN SINA's commitment to quality and sustainability in natural medicine production.

Sustainability in Sourcing

4.16 Sustainable practices in sourcing

Sustainable practices in sourcing are critical to enhancing the environmental and social responsibility of supply chains, particularly in natural medicine. In the context of IBN SINA Natural Medicine Ltd., sustainability in sourcing involves selecting raw materials that are ethically sourced, ecologically sound, and socially responsible. The company prioritizes suppliers who practice sustainable agriculture, ensuring that medicinal plants are grown without harmful pesticides and in a manner that conserves biodiversity. Additionally, IBN SINA focuses on fair trade practices, ensuring that farmers and local communities benefit economically from the cultivation of natural medicines. Moreover, the company emphasizes the reduction of carbon footprints by optimizing transportation routes and investing in eco-friendly packaging. By adopting these sustainable sourcing strategies, IBN SINA not only ensures a reliable supply of quality natural medicines but also contributes to the long-term preservation of the environment and the well-being of the communities involved in its supply chain.

4.17 Environmental concerns

Sustainability in sourcing, environmental concerns play a pivotal role in the supply chain management of natural medicine. The IBN SINA Natural Medicine Ltd. must prioritize eco-friendly sourcing practices to minimize its environmental footprint. This involves selecting raw materials that are ethically sourced and grown without harming ecosystems or depleting natural resources. Implementing sustainable cultivation methods, such as organic farming, ensures that the biodiversity of the local environment is preserved, and the use of harmful pesticides and chemicals is avoided. Additionally, reducing carbon emissions throughout the supply chain, from transportation to packaging, contributes to a more sustainable model. The company also faces the challenge of managing waste generated during production processes, promoting recycling, and reusing materials wherever possible. By addressing these environmental concerns, IBN SINA can not only enhance its reputation but also contribute positively to global sustainability goals while ensuring the longevity of its raw material sources.

Impact of Sourcing on Supply Chain Efficiency

4.18 Impact on cost & Lead Time

The sourcing decisions made by IBN SINA Natural Medicine Ltd. significantly impact the cost and lead time in their supply chain. By carefully selecting suppliers based on quality, reliability, and cost-efficiency, the company can reduce procurement costs, which directly affect the overall cost of production. Furthermore, sourcing natural medicines from local or international suppliers influences the lead time, which is critical for ensuring timely availability of raw materials for production. Efficient sourcing strategies, such as building long-term partnerships with reliable suppliers or using strategic sourcing models, can streamline the procurement process and reduce delays. On the other hand, poor sourcing choices, like relying on unreliable suppliers or distant locations, could increase lead times and incur additional costs due to disruptions. Therefore, the sourcing strategy plays a crucial role in balancing cost control and lead time efficiency, ultimately enhancing the overall supply chain performance of IBN SINA.

4.19 Impact on Quality

The impact of sourcing on supply chain efficiency plays a crucial role in determining the quality of natural medicines at IBN SINA Natural Medicine Ltd. By carefully selecting suppliers and ensuring the consistent sourcing of high-quality raw materials, the company can maintain the integrity of its products. Efficient sourcing directly affects the ability to meet production timelines, reducing delays and ensuring timely delivery of high-quality medicines to customers. Furthermore, the optimization of sourcing processes allows for better inventory management and cost control, which ultimately supports the production of premium-quality natural medicines. When sourcing is aligned with effective supply chain strategies, it enhances the overall quality assurance process, reduces the risk of contamination, and ensures compliance with industry standards. Therefore, strategic sourcing contributes not only to supply chain efficiency but also to the superior quality of products, reinforcing the company's competitive edge in the natural medicine market.

Chapter: 05

Findings

5.1 Findings:

- **Supplier Network and Relationships**: The study found that IBN SINA Natural Medicine Limited relies heavily on a diverse network of local and international suppliers for sourcing raw materials, ensuring the availability of high-quality natural ingredients.
- **Quality Control Challenges**: A key finding is the difficulty in maintaining consistent quality across different suppliers. Variations in raw material quality impact the production process and final product standards.
- **Sustainability in Sourcing**: The Company emphasizes sustainable sourcing practices, such as using organic and eco-friendly materials, but faces challenges in monitoring the sustainability efforts of their suppliers.
- **Impact of Local Sourcing**: Sourcing raw materials locally has enabled IBN SINA to reduce lead times and transportation costs, yet challenges such as seasonal fluctuations in availability and price volatility remain.
- **Technology and Supply Chain Integration**: IBN SINA has implemented technology to enhance supply chain visibility, allowing for better forecasting, inventory management, and real-time tracking of raw material shipments.
- **Regulatory Compliance and Certifications**: The sourcing process is impacted by the need to comply with both local and international regulatory standards, requiring extensive documentation and certification, which can sometimes delay procurement.
- **Cost Implications of Sourcing**: Sourcing natural ingredients from multiple Suppliers increases procurement costs, but long-term relationships and bulk purchasing agreements help mitigate some of these expenses.
- **Supply Chain Risk Management**: The study identified the need for stronger risk management strategies, especially concerning supply chain disruptions caused by natural disasters, geopolitical issues, and supplier insolvency.

Chapter: 06
Recommendations & Conclusion

6.1 Recommendations

- Enhance supplier relationship management through strategic partnerships and long-term contracts to improve quality and reduce costs.
- Implement a robust inventory management system, such as Just-In-Time (JIT) or Vendor-Managed Inventory (VMI), to optimize stock levels and reduce holding costs.
- Invest in advanced information technology (IT) solutions to streamline supply chain processes and improve data visibility and accuracy.
- Foster a culture of continuous improvement and innovation within the supply chain function to identify and implement best practices.
- Develop strong communication channels between different departments within the supply chain to facilitate information sharing and collaboration.
- Conduct regular performance evaluations and feedback sessions with supply chain personnel to identify areas for improvement and recognize outstanding performance.
- Implement a comprehensive quality management system to ensure product quality and regulatory compliance throughout the supply chain.
- Develop a risk management plan to identify potential supply chain disruptions and implement mitigation strategies to minimize their impact.
- Enhance transportation and logistics management by optimizing routes, consolidating shipments, and utilizing efficient transportation modes.
- Establish a robust customer relationship management (CRM) system to improve customer satisfaction and loyalty.
- Implement a lean manufacturing approach to reduce waste and improve efficiency in production processes.
- Invest in employee training and development programs to enhance skills and knowledge within the supply chain function.
- Conduct regular performance audits to assess the effectiveness of supply chain management practices and identify areas for improvement.
- Develop a sustainable supply chain strategy to minimize environmental impact and reduce carbon emissions.

- Collaborate with suppliers to develop sustainable sourcing practices and reduce reliance on single-source suppliers.
- Implement a robust demand forecasting system to improve accuracy and reduce stock outs and overstocking.
- Establish a regular review process to monitor and evaluate the performance of key performance indicators (KPIs) related to supply chain management.
- Develop a strong corporate social responsibility (CSR) strategy to enhance the company's reputation and attract socially conscious customers.
- Implement a robust cybersecurity program to protect sensitive supply chain data and prevent cyberattacks.
- Regularly review and update supply chain management policies and procedures to ensure alignment with the company's strategic objectives.

6.2 Conclusion

The case study of The Ibn SINA Natural Medicine Ltd. Provides valuable insights into the critical role of supply chain management (SCM) in sourcing practices in driving organizational performance. By meticulously examining the company's SCM strategies, including supplier relationships, inventory management, logistics, and information technology, and several key findings emerge.

Firstly, the study underscores the significance of strong supplier relationships in ensuring a reliable and efficient supply chain. INM's focus on fostering collaborative partnerships with suppliers has enabled them to mitigate risks, reduce costs, and improve product quality.

Secondly, the effective implementation of inventory management techniques, such as demand forecasting and just-in-time inventory systems, has played a crucial role in optimizing inventory levels and minimizing holding costs.

Thirdly, the company's robust logistics network, encompassing transportation, warehousing, and distribution, has facilitated timely and cost-effective delivery of products to the market.

Lastly, the strategic utilization of information technology has empowered INM to enhance

visibility, streamline operations, and make data-driven decisions.

In conclusion, the findings of this case study demonstrate that a well-executed SCM strategy can significantly contribute to an organization's overall performance. By prioritizing key SCM practices, INM has achieved operational excellence, improved customer satisfaction, and gained a competitive edge in the Natural Medicine industry. As the global business landscape continues to evolve, organizations must remain agile and adaptable in their SCM approaches to address emerging challenges and capitalize on new opportunity.

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