SUPPLY CHAIN MANAGEMENT OF FUNGICIDE IN BANGLADESH: A CASE STUDY ON BAYER CROPSCIENCE LTD.

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MASTER OF BUSINESS ADMINISTRATION IN AGRIBUSINESS

FACULTY OF AGRIBUSINESS MANAGEMENT

SHER-E-BANGLA AGRICULTURAL UNIVERSITY

DHAKA-1207

JUNE, 2016

SUPPLY CHAIN MANAGEMENT OF FUNGICIDE IN BANGLADESH: A CASE STUDY ON BAYER CROPSCIENCE LTD.

By

SUBBIR AHMED SOURAV

REGISTRATION NO: 10-03881

An Internship Report
Submitted to the Faculty of Agribusiness Management,
Sher-e-Bangla Agricultural University, Dhaka,
in partial fulfillment of the requirements
for the degree of

MBA IN AGRIBUSINESS

SEMESTER: JULY-DECEMBER, 2015

Approved by

_____

(Professor Gazi M. A. Jalil)
Dept. of Agricultural Economics
Sher-e-Bangla Agricultural University
Dhaka-1207
Supervisor

_____

(Professor Dr. Rokeya Begum)
Chairman
Examination Committee
Sher-e-Bangla Agricultural University
Dhaka-1207

LETTER OF TRANSMITTAL

18th May, 2017

Prof. Gazi M.A. Jalil
Department of Agricultural Economics
Sher-e-Bangla Agricultural University,
Sher-e-Bangla Nagar, Dhaka-1207.

Subject: Submission of Internship Report.

Dear Sir,

I am very pleased to submit you this internship report entitled **"Supply Chain Management of Fungicide in Bangladesh: A Case Study on Bayer CropScience Ltd."** with due gratitude and appreciation. As per partial fulfillment of the requirements for the Masters of Business Administration Program. I have completed the internship from **Bayer CropScience Ltd.**The internship program has given me the opportunity to learn about different aspects of this well reputed organization. Before facing the corporate world, I have gathered general idea about the organizational culture and activities.

I therefore, pray and hope that you would be kind enough to accept this report as partial fulfillment of the requirements of my post-graduation.

Sincerely yours,

Subbir Ahmed Sourav
Reg. No. 10-03881
MBA in Agribusiness
Faculty of Agribusiness Management
Sher-e-Bangla Agricultural University, Dhaka-1207

Department of Agricultural Economics
FACULTY OF AGRIBUSINESS MANAGEMENT
Sher-e-Bangla Agricultural University
Sher-e-Bangla Nagar, Dhaka-1207

CERTIFICATE

This is to certify that the internship report entitled **''Supply chain management of fungicide in Bangladesh: A case study on Bayer CropScience Ltd.''** submitted to the Faculty of Agribusiness Management, Sher-e-Bangla Agricultural University, Dhaka, in partial fulfillment of the requirements for the degree of **Master of Business Administration in Agribusiness**, embodies the results of a piece of bona fide carried out by **Subbir Ahned Sourav,** Registration No. 10-03881 under my supervision and guidance. No part of this report has been submitted for any other degree or diploma.

I further certify that such help or source of information as has been availed of during the course of this investigation has duly been acknowledged.

Dated:18.05.2017
Dhaka, Bangladesh

(Professor Gazi M. A. Jalil)
Dept. of Agricultural Economics
Sher-e-Bangla Agricultural University
Dhaka-1207
Supervisor

TO WHOM IT MAY CONCERN

This is to certify that Mr. Subbir Ahmed Sourav, student of MBA in Agribusiness, Sher-e-Bangla Agricultural University, Dhaka-1207, Bangladesh has successfully completed " Sixteen week" (From 21rd January , 2017 to 14th May, 2017) long internship programme at our company. During the period of his internship programme with us he was found punctual, hardworking and inquisitive.

We wish him every success in life.

For, Bayer CropScience Ltd.

Sayed Abul Khair

Sr. Manager

Production Import & Logistics

Registered Office
Bayer CropScience Limited
H.M. Plaza (10th Floor)
Suite # 07, Plot # 34
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Uttara C/A, Dhaka-1230
(A Joint Bayer CropScience/ BCIC Enterprise)
Corporate Office
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DECLARATION

I hereby declare that the internship report entitled **"Supply chain management of fungicide in Bangladesh: A case study on Bayer CropScience Ltd."** has been prepared by me under the supervisor of **Professor Gazi M.A. Jalil**, Dept. of Agricultural Economics, Faculty of Agribusiness Management, Sher-e-Bangla Agricultural University.

I also declare that the matter embodied in this report is original and neither this report nor any part of this report has been submitted elsewhere for the award of any other any degree or any other purpose.

……

Subbir Ahmed Sourav
Reg. No: 10-03881
MBA (Agribusiness)
Faculty of Agribusiness Management,
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Supply Chain Management of Fungicide in Bangladesh: A Case Study on Bayer CropScience Ltd.

Executive Summary

Bayer CropScience Ltd. was founded 147 years ago in 1863 On August. Friderich Bayer is the founder of this company. Bayer CropScience Ltd. Bangladesh registered under the companies Act 1994.The Company inter alia on the business of manufacturing, marketing, distributing agro chemicals and other agricultural related products and inputs. Bayer CropScience Ltd. hold the first position in fungicide in Bangladesh. Bayer maintains a balanced supply chain system for fungicide in Bangladesh. Bayer CropScience Ltd.considers five factors which needed to coordinate the action of supply chain of fungicide. These are Demand forecasting, Order batching, Product rationing, Product pricing, Performance incentives. Bayer CropScience Ltd. use SAP software for demand and collect detailed demand cost, margin and suppliers information to make inventory policy decisions. Bayer CropScience Ltd. import fungicide for the commercial & industrial basis. Bayer CropScience Ltd. basically conduct import base business. They import fungicides from Germany, India, Thailand & some others country.They commercially import fungicide than do few industrial work then spread them its channels for marketing. Bayer CropScience Ltd. included following documents for the overall supply chain of fungicide in Bangladesh. These are Letter of Credit, Commercial Invoice, Bill of Exchange, Bill of lading, Insurance cover note, Certificate of origin, Others. Bayer CropScience Ltd. select eight regions for their facility layout. There they set warehouse to maintain their inventory & distribution. The regions are Mymensingh, Bhairab, Commilla, Jessore, Bogra, Rangpur, Rajshahi, Faridpur.Bayer CropScience Ltd.The Key Stake Holders of Bayer are Suppliers, Marketers, Dealers, Distributors, Agents, Transporter, Consultant and Clients, Service Providers (Business Partners or Associates). The company can appoint any person as its Agent (s), Distributor (s), Dealer (s), Retailers or Representative (s) for the sales and distribution of the products or sell the product directly to the customer.

ACKNOWLEDGMENT

At first I present my due regards to God, who provided me the excellent opportunity to build and complete this Internship report on “Supply chain management of fungicide in Bangladesh: A case study on Bayer CropScience Ltd.”

I want to mention the contribution of all those who have inspired, influenced and guided me to complete this report successfully. First of all, I would like to express my heartiest gratitude to my venerable supervisor Professor Gazi M. A. Jalil, Internship Supervisor, Department of Agricultural Economics, Faculty of Agribusiness Management, Sher-e-Bangla Agricultural University, for his kind and sincere guidance, constructive criticism and personal supervision all through my work. I wish to acknowledge my gratitude to all my respected teachers of Sher-e-Bangla Agricultural University, for their suggestions and kind cooperation.

I am also indebted to authority of Bayer CropScience Bangladesh Ltd. to give me chance for internship. Besides this, thanks to Mr. Sayed Abul Khair, Sr. Manager, Production Import & Logistics under whom I am doing my internship. And all the faculty members deserve thanks for their encouragement and whole hearted co-operation.

Dedicted To My Beloved Parents

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CHAPTAR ONE

Introduction

1.1 Introduction

Bayer CropScience Ltd. Bangladesh is a company registry under the companies Act 1994. The company inter alia on the business of Importing/ Marketing/ Distributing Agro Chemicals and other agricultural related product/ Inputs (here in after referred to as the product). Bayer is a global enterprise with core competencies in the fields of health care, nutrition and high-tech materials. The company's products and services are designed to benefit people and improve their quality of life. At the same time Bayer creates value through innovation, growth and high earning power. The Group is committed to the principles of sustainable development and to its role as a socially and ethically responsible corporate citizen. Economy, ecology and social responsibility are corporate policy objectives of equal rank.

The main Points of COFA (Code of Conduct of the Association)-

- No Conflict of interest, separation of corporate & personal interest
- Commitment to fair competition no Antitrust Violation
- Integrity in Business Dealing no corrupt practices
- Principal of sustainability no risk for human health & environment
- Protection of Human Right, healthy working environment
- Proper Records & Information transparent reporting & Communication
- Up holding commercial laws no export-import Violation

1.2 Origin of the study

Now a day, education is not just limited to books and class rooms. In today's world, education is the tool to understand the real world and apply knowledge for the betterment of the society as well as business. From education the theoretical knowledge is obtained from courses of study, which is only the half way of the subject matter. Practical knowledge has no alternative. The perfect coordination between theory and practice is of paramount importance in the context of the modern business world in order to resolve the dichotomy between these two areas. Internship Program brings a student closer to the real life situation and thereby helps to launch a career with some prior experience. From the internship program, each student is attached with an organization. The report has been prepared to fulfill the partial requirement of the MBA in Agribusiness program of Sher-e-Bangla Agricultural University (SAU). For this report I worked at Bayer CropScience Ltd. as an internee. During this time I was engage with studying & discussing about "The supply chain Management of Fungicide.

1.3 Title of the internship

"Supply chain management of fungicide in Bangladesh: A case study on Bayer CropScience Ltd."

1.4 Objectives of the study

The prime objectives of this report are:

- To know about the supply chain Management of fungicide.
- To study the coordination in the supply chain of fungicide.
- To identify the import procedure of fungicide of Bayer CropScience Ltd.
- To make recommendation on supply chain system of fungicide of Bayer CropScience Ltd.

This report has been prepared through extensive discussion with Bayer CropScience employees. While preparing this report, I had a great opportunity to have an in depth knowledge of all the Corporate activities practiced by the Bayer CropScience Ltd.

1.5 Scope of the Study

This report is based on my involvement in the project and the information gathered through literature survey and data collection from different processes in Bayer CropScience Ltd. Information also provided by Sayed Abul Khair, Sr. Manager, Production Import & Logistics under whom I am doing my internship. However the report covers following areas:

- Sustainability strategies for warehousing and transportation.
- Profitable steps for a supply chain.
- Sufficient records & publications as well as up to date facts & figures are not readily available. These constraints narrowed the scope of the real analysis.
- For the reason of confidentiality, some useful information could not be disclosed.
- Time frame for the research was rather limited.
- Professional obligations further limited the scope to go for a detailed analysis.

1.6 Limitation of the study

Like any other study the limitations of this study is not out of questions. But the following factors seem to me the main points of weakness of this study:

- Supply chain Management is a very recent issue and it has not yet been considered in all the process's activities.
- The research focused only on a limited period of time that is Four months. As a result, the strength of outcome will be controlled by the fact of narrow time era and exhaustive study was impractical.
- Actually it's a study based report & that's why it may not follow a traditional internship report.
- Finally, to generalize the findings this paper might be necessary needed further research with respect to other countries to confirm the claims made in this.

1.7 Supply Chain

Supply chains encompass the companies and the business activities needed to design, make, deliver, and use a product or service. Businesses depend on their supply chains to provide them with what they need to survive and thrive. Every business fits into one or more supply chains and has a role to play in each of them.

The term “supply chain management” arose in the late 1980s and came into widespread use in the 1990s. Prior to that time, businesses used terms such as “logistics” and “operations management” instead. Some definitions of a supply chain are offered below:

“A supply chain is a network of facilities and distribution options that performs the functions of procurement of materials, transformation of these materials into intermediate and finished products, and the distribution of these finished products to customers.”—from Ganeshan and Harrison at Penn State University in their article An Introduction to Supply Chain Management

“A supply chain consists of all stages involved, directly or indirectly, in fulfilling a customer request. The supply chain not only includes the manufacturer and suppliers, but also transporters, warehouses, retailers, and customers themselves.”—from Chopra and Meindl in their book Supply Chain Management: Strategy, Planning, and Operations.

The pace of change and the uncertainty about how markets will evolve has made it increasingly important for companies to be aware of the supply chains they participate in and to understand the roles that they play. Those companies that learn how to build and participate in strong supply chains will have a substantial competitive advantage in their markets.

There are five areas where companies can make decisions that will define their supply chain capabilities: Production; Inventory; Location; Transportation; and Information.

1.8 Five major supply chain drivers

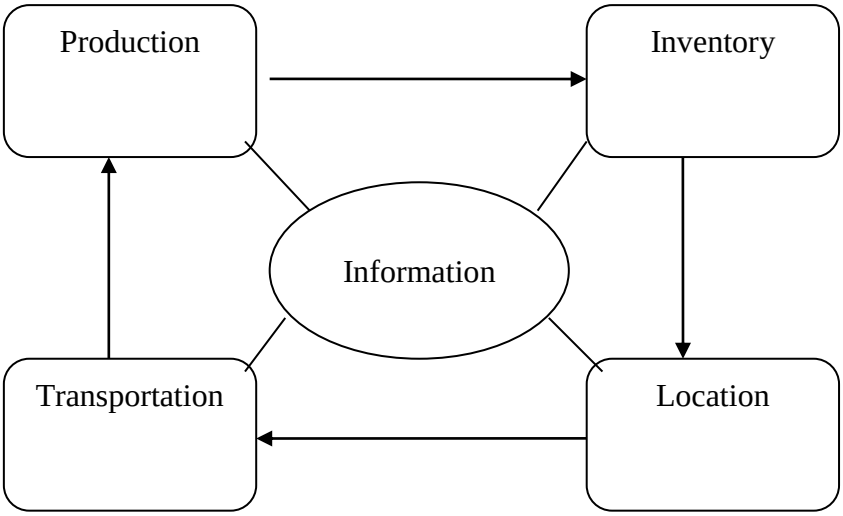


Figure -1: Five major supply chain driver

a. Production

Production refers to the capacity of a supply chain to make and store products. The facilities of production are factories and warehouses. The fundamental decision that managers face when making production decisions is how to resolve the trade-off between responsiveness and efficiency. If factories and warehouses are built with a lot of excess capacity, they can be very flexible and respond quickly to wide swings in product demand. Facilities where all or almost all capacity is being used are not capable of responding easily to fluctuations in demand. On the other hand, capacity costs money and excess capacity is idle capacity not in use and not generating revenue. So the more excess capacity that exists, the less efficient the operation becomes.

b. Inventory

Inventory is spread throughout the supply chain and includes everything from raw material to work in process to finished goods that are held by the manufacturers, distributors, and retailers in a supply chain. Again, managers must decide where they want to position themselves in the trade-off between responsiveness and efficiency. Holding large amounts of inventory allows a company or an entire supply chain to be very responsive to fluctuations in customer demand. However, the creation and storage of inventory is a cost and to achieve high levels of efficiency, the cost of inventory should be kept as low as possible.

c. Location

Location refers to the geographical sitting of supply chain facilities. It also includes the decisions related to which activities should be performed in each facility. When making location decisions, managers need to consider a range of factors that relate to a given location including the cost of facilities, the cost of labor, skills available in the workforce, infrastructure conditions, taxes and tariffs, and proximity to suppliers and customers.

d. Transportation

This refers to the movement of everything from raw material to finished goods between different facilities in a supply chain. In transportation, the trade-off between responsiveness and efficiency is manifested in the choice of transport mode. Fast modes of transport such as airplanes are very responsive but also more costly. Slower modes such as ship and rail are very cost efficient but not as responsive. Since transportation costs can be as much as a third of the operating cost of a supply chain, decisions made here are very important.

e. Information

Information is the basis upon which to make decisions regarding the other four supply chain drivers. It is the connection between all of the activities and operations in a supply chain.

1.9 Supply chain structure

Simple supply chain structure

Extended supply chain structure

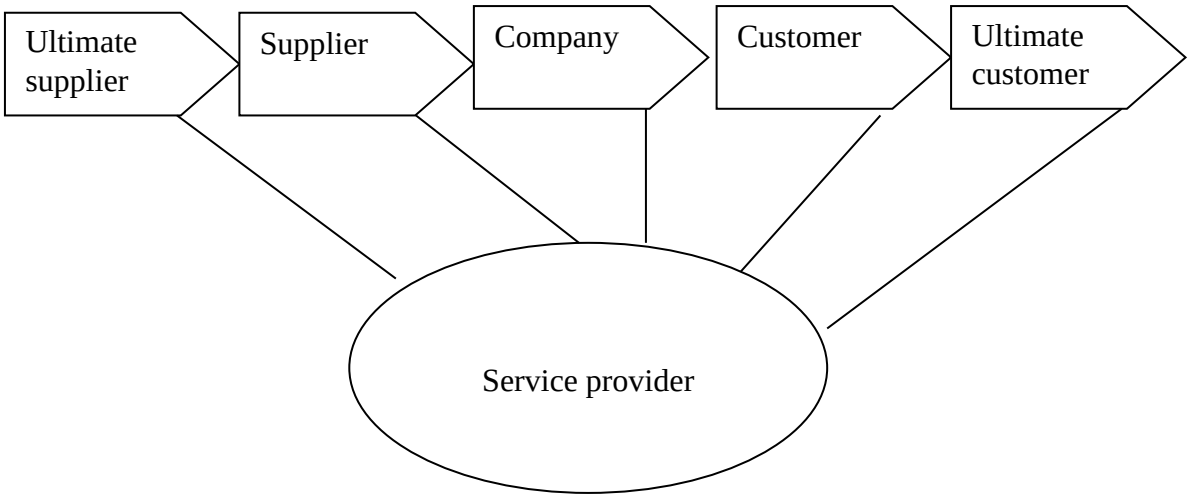


Figure-2: Supply chain structure

CHAPTAR TWO

Review of literature

2.1 Literature review

Ben-Daya *et al*. (2008) explored the topic in a particular context, *i.e*. the industrial district (ID), that constitutes a specific production model where complex SC networks can be identified. SC cooperation may take on several forms in IDs and may produce several benefits (e. g. Upgrading quality and reducing costs).

Burgess *et al*. (2006) reviewed 100 randomly selected articles from 614 usable articles found in the ABI/Inform Database across a 19 year (1985 to 2003) period. Their sample addressed manufacturing and consumer goods industries, and the research articles reviewed by them focused on a more narrowly defined operations management approach to Supply Chain Management. They classified the articles into four groups, namely (1) Descriptive features of SCM, (2) Definition issues, (3) Theoretical concerns and (4) Research methodological issues. They found SCM to be a relatively young field with exponential growth in interest from researchers in the recent past.

Zaman *et al.* (2012) Competitive strategies can be achieved by using a different weight calculation for different supply chain situations. By identifying optimal performance metrics and applying performance evaluation methods, managers can predict the overall supply chain performance under lean strategy.

Chen, F. *et al.* (2000) An important observation in supply chain management, known as the bullwhip effect, suggests that demand variability increases as one moves up a supply chain. In this paper, they quantify this effect for simple, two-stage supply chains consisting of a single retailer and a single manufacturer.

Gavirneni, S. (2002) argue that, in some cases, it may be necessary to change the way the supply chain is managed to make complete use of the information flows. They support this argument by analyzing a supply chain containing a capacitated supplier and a retailer facing i.i.d. demands. In addition, there are fixed ordering costs between the retailer and the supplier.

CHAPTAR THREE

Organizational Overview

3.1 Bayer CropScience flashback

The Bayer CropScience Ltd. was founded 147 years ago in 1863 On August, businessman Friderich Bayer and master Johann Friedrich Weskott establish a dyestuffs factory in Barmen, now of the city of Wuppertal. The company founders purchase an interest in a coal tar dye factory in the United States (1865) and begin exporting intermediates. Than 1876 a branch factory is opened in Moscow. On July 1,1881 the descendant of Bayer and Weskott establish the joint stock company Farbenfabriken vorm. Friedr. Bayer & Co. In 1884 the chemist Carl Duisberg starts his career at Bayer. Under his leadership, the scientists make pioneering discoveries. In 1897 Bayer scientist Dr. Felix Hoffmann succeeds in synthesizing a chemically pure and stable form of acetylsalicylic acid, the active ingredient of Aspirin. In 1899 Aspirin is registered as a trademark and sets out to become the world's favorite painkiller. The company's headquarters are transferred to Leverkusen 1912. In 1925 Farbenfabriken vorm Fridr. Bayer & Co. merge with other companies to form I.G Farbenindustrie AG. As Germany's most important chemical Company, I.G. Farbenindustrie also becomes involved in the events of the Third Reich. After the Second World War, the Allies seized and subsequently break up the I.G Farben. In 1939 Bayer scientist Gerhard Domagk is awarded the Nobel Prize for Medicine for the discovery of the antibacterial effects of sulfonamides (Prontosil). Bayer is re-established as Farbenfabriken Bayer AG in 1951 (changing its name to Bayer AG in 1972). Ground is broken for the Brunsbuttel production site in 1973 and six years later, in 1979, for the Agricultural Center (now the corporate headquarters of BCS) in Monheim. 1986 Bayer's entire U.S activities are consolidated under the management holding company Bayer USA Inc, Pittsburgh. In 1994 the first production facility of Bayer Bitterfeld GmbH comes on stream. In the same year, Bayer acquires the North American self-medication business Sterling Winthrop, at the same time regaining full right to the Bayer name for all products and the Bayer Cross trademark in the United States and Canada, which had been confiscated after the First World War.

In 1999 to make the 100th birthday of Aspirin® on March 6, Professional mountaineers wrap Bayer's former high-rise headquarters building in Leverkusen, transforming it into the world's biggest Aspirin® pack and earning the company three entries in the Guinness Book of Records.

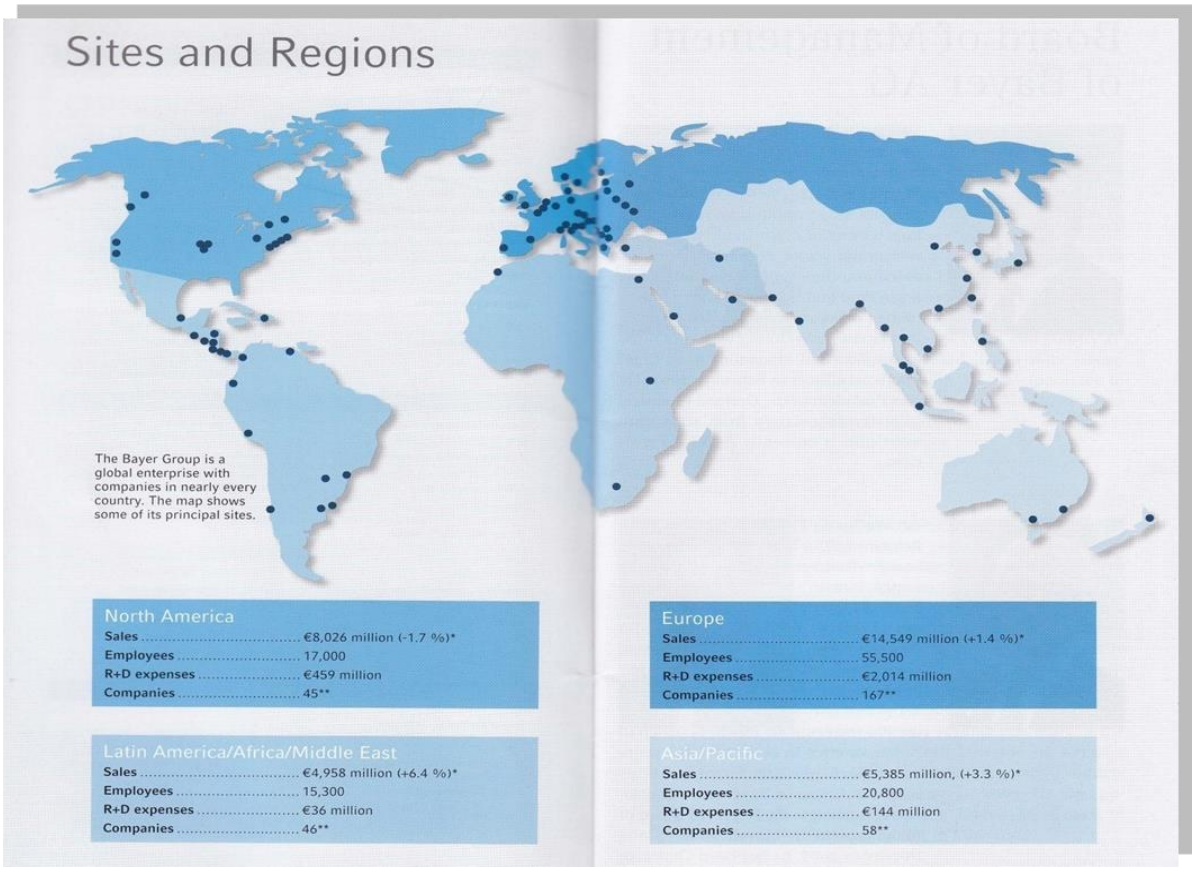


Figure-3: Sites & Region of Bayer CropScience Ltd.

In 2000 acquisition of the polyols business of Lyondell Chemical Company, United States, makers Bayer the world's biggest producer of raw materials for polyurethanes. In 2001 Bayer acquire Aventis CropScience for € 7.25 billion, making it a world leader in crop protection. On December6, the company's management announces plans to establish independent operating subsidiaries under the umbrella of a management holding company. In 2002 Bayer AG is launched in October as the first legally independent Bayer subgroup. The world Health Organization (WHO) 2003 includes acetylsalicylic acid, the active ingredient in Aspirin, in its "List of essential medicines".

3.2 Bayer CropScience Mission

LIFE- It stands for Leadership, Integrity, Flexibility and Efficiency.

3.3 Bayer CropScience Vision

"Science for a better life"

3.4 Bayer CropScience values

- A will to success
- A passion for our stakeholders
- Integrity, openness & honesty
- Respect for people & nature
- Sustainability of our action

3.5 Bayer CropScience in Bangladesh

Bayer CropScience Ltd. markets high quality and well established international Agro-chemicals. The brand portfolio of Bayer CropScience Ltd. Bangladesh currently consists of Insecticides; Fungicides; Plant Hormone & Liquid Fertilizer; Bio Science Products; Herbicides. It has eight regional office around the country; Mymensingh, Bhairab, Commilla, Jessore, Bogra, Rangpur, Rajshahi & Faridpur. The Head Quarter stay at Masum Plaza, Plot no- 13, Road no- 15, Sector-03, Uttara, Dhaka- 1230.

In our country Bayer CropScience Ltd. hold the first position in fungicide. There are so many fungicides that are launched by Bayer CropScience Ltd. That's Are

- Antracol 70 WP
- Folicur EC 250
- Diathane M 45
- Nativo 75 WG
- Melody Duo 66.8 WP

One new fungicide has launched in Dec 2016 is (Luna Sensation). This product has brought a revolution in the sector of fungicide in Bangladesh.

3.6 Organizational structure

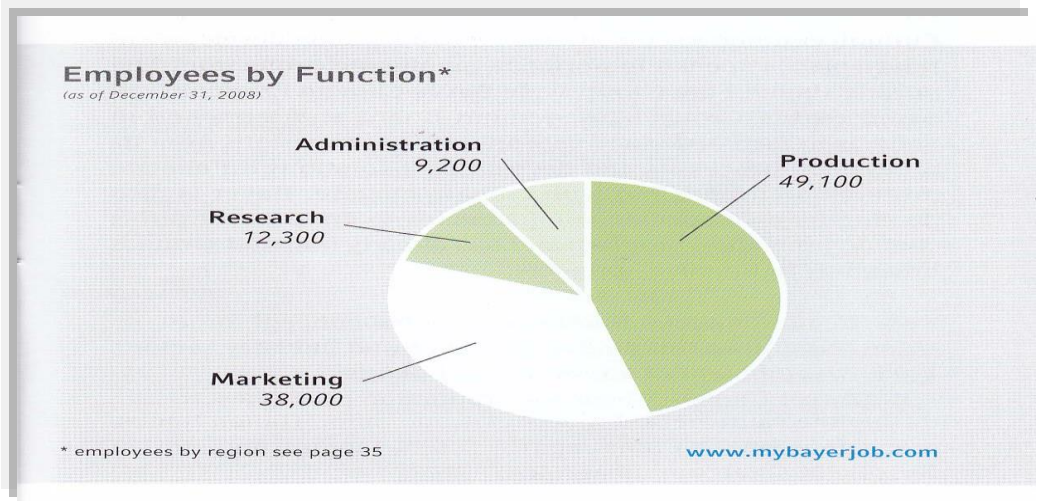
Bayer's total operation is managed through the following functional departments.

Corporate data

Company Name	Bayer CropScience Ltd.
Headquarter	Monheime, Germany
Chairman of board of management	Friedrich Berschauer
Business group	Crop protection, Environmental science, Human health, Bio science, Material science.
Employees	1,07,800

3.7 Employee

On June 30, 2016, the Bayer Group employed 107,800 people worldwide, compared with 108,400 twelve months earlier. The number of employees thus remained practically constant (-0.6%). In Germany we had 36,200 employees (June 30, 2015: 36,400), who made up 33.6% of the Group workforce. HealthCare employed 53,300 people (Q2 2015: 53,700). Crop Science had 18,800 employees (Q2 2015: 18,500), while Material Science had 14,200 (Q2 2015: 14,600). The remaining 21,500 (Q2 2015: 21,600) employees worked mainly for the service companies. Personnel expenses rose by 2.4% in the first half of 2016 to €4,044 million (H1 2015: €3,948 million). This increase was largely attributable to regular salary increases and to negative currency effects. Sales of the Bayer Group rose by 14.6 percent in the second quarter, to EUR 9,179 million (Q2 2015: EUR 8,009 million). Adjusted for currency and portfolio effects, business grew by 9.2



percent. Earnings before interest, taxes,

Figure-4: Employ by function (Pie chart)

depreciation and amortization (EBITDA) – before special items – improved by 8.6 percent to EUR 1,917 million (Q2 2015: EUR 1,765 million). This was attributable primarily to the gratifying business trends at Material Science and Consumer Health, as well as to positive currency effects. The operating result (EBIT) before special items advanced by 14.4 percent to EUR 1,260 million (Q2 2015: EUR 1,101 million).

3.8 Financial Statement

Bayer group consolidated income statements

	2nd Quarter 2015 € million	2nd Quarter 2016 € million	1st Half 2015 € million	1st Half 2016 € million
Net sales	8,009	9,179	15,904	17,495
Cost of goods sold	(3,794)	(4,464)	(7,580)	(8,374)
Gross profit	4,215	4,715	8,324	9,121
Selling expenses	(2,033)	(2,258)	(3,993)	(4,224)
Research and development expenses	(663)	(747)	(1,320)	(1,464)
General administration expenses	(404)	(434)	(806)	(839)
Other operating income	412	172	546	206
Other operating expenses	(506)	(443)	(757)	(598)
Operating result [EBIT]	1,021	1,005	1,994	2,202
Equity-method loss	(13)	(12)	(26)	(32)
Non-operating income	195	160	478	315
Non-operating expenses	(474)	(409)	(1,078)	(788)
Non-operating result	(292)	(261)	(626)	(505)
Income before income taxes	729	744	1,368	1,697
Income taxes	(199)	(220)	(414)	(479)
Income after taxes	530	524	954	1,218
of which attributable to non-controlling interest	(2)	(1)	(3)	0
of which attributable to Bayer AG stockholders (net income)	532	525	957	1,218
	€	€	€	€
Earnings per share				
Basic*	0.67	0.63	1.22	1.47
Diluted*	0.67	0.63	1.22	1.47

* The ordinary shares that resulted from conversion of the mandatory convertible bond were treated as already issued shares following the issuance of the bond.

The Bayer Group once again achieved gains in sales and earnings in the second quarter of 2016. “Material Science has left the crisis behind and saw business expand more strongly than expected. Volumes have returned to the pre-crisis level,” explained Management Board Chairman Werner Wenning following the publication of the interim

report for the second quarter. Sales at HealthCare improved slightly, while the subgroup's earnings matched the prior-year level. CropScience was down year on year. That subgroup saw volumes and selling prices decline in a market environment made difficult by the competitive situation and unfavorable weather conditions. "We can confirm the 2016 Group outlook we raised in April," Wenning said. The Bayer Chairman announced that the company will increase its investment for the future more substantially than planned. "We now expect research and development expenses for the full year to come in at a record level of some EUR 3.1 billion.

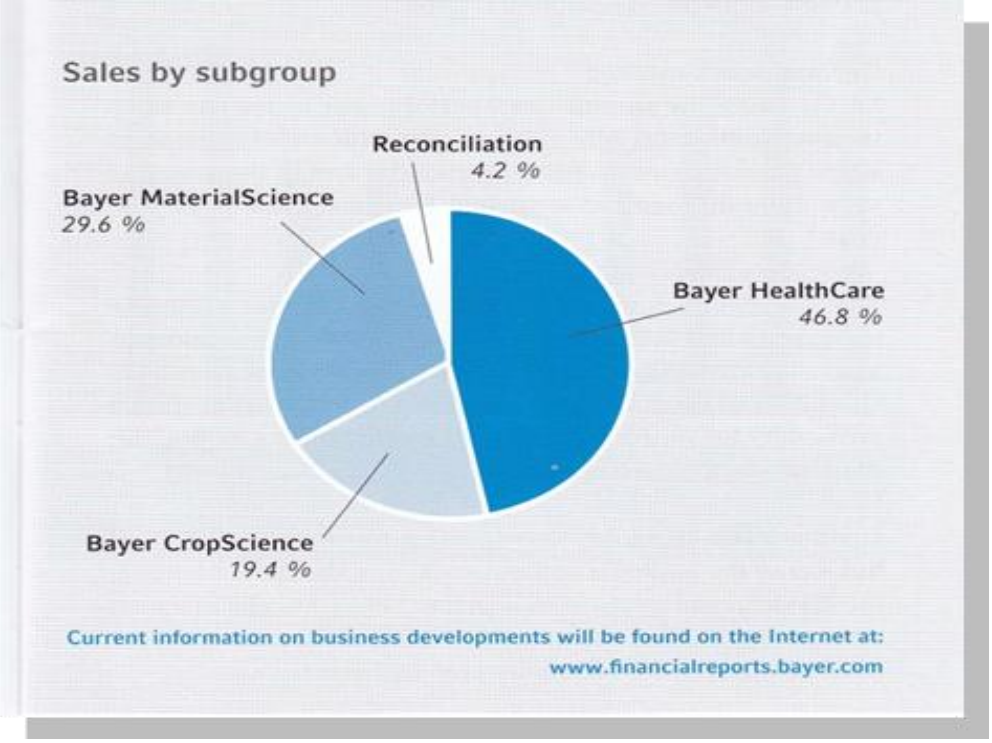


Figure-5: Sales by subgroup

CHAPTAR FOUR

Methodology

4.1 Methodology

Methodology includes direct observation, face-to-face discussion with employees of different departments, study of files, circulars etc. and practical work. Methodology includes both quantitative and qualitative data. However, this report is basically qualitative in nature. In all the cases depending on the requirements data have been collected from different sources. This report is based on secondary source of information. This is a desk research where secondary information is essential for the purpose of the objective due to some limitations. For theoretical development of this research paper the data has been collected from the various sources like different publications, library sources, internet, books, articles, etc. In fact, secondary data was collected from:

- Reports and journals of Bayer CropScience Ltd. published at home and abroad.
- News papers.
- Feedback from Sr. Manager, Production Import & Logistics.
- Internet

4.2 Source of information:

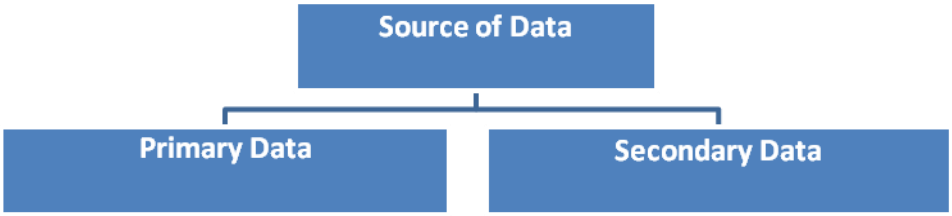


Figure-6: Source of information

I collect all this information by two ways.

Primary sources:

While working Bayer CropScience Ltd. as an intern I have collect information by conversion with the concern officers and staffs. So mostly I collected information by my practical experience.

Secondary sources:

I collect different report & Magazine of Bayer CropScience Ltd. for my report source. Rather than the rest of the information comes from the Bayer CropScience Ltd. website.

4.3 Data analysis:

Data that are collected through the primary investigation or from secondary sources have been analyzed. The data have been verified from different sources such as from Periodicals published by the Bayer CropScience Ltd. Based on the notes taken from the entire above sources a report was then written up gradually.

However, it is necessary discussion among the employee of Bayer CropScience Ltd (BCS) regarding report preparation. The necessary improvements & changes in the report then made if it is required.

CHAPTAR FIVE

Result & Discussion

5.1 Steps of supply chain function of fungicide of Bayer CropScience Ltd.

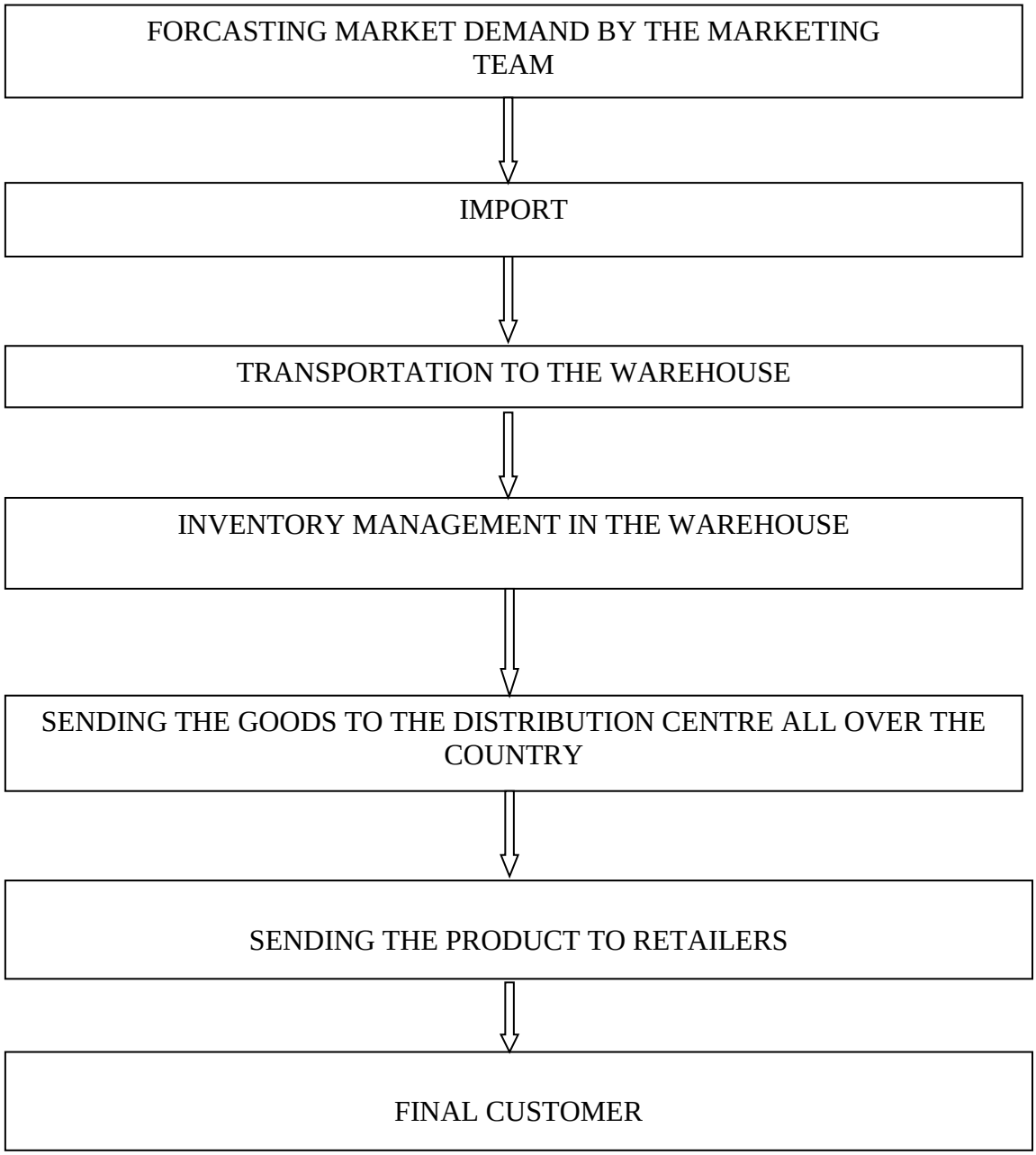


Figure-7: Steps of supply chain function of fungicide of Bayer CropScience Ltd.

5.2 Supply chain coordination & technology uses by Bayer on fungicide

5.2.1 Supply chain coordination

Channel coordination (or supply chain coordination) aims at improving supply chain performance by aligning the plans and the objectives of individual enterprises. It usually focuses on inventory management and ordering decisions in distributed inter-company settings. Channel coordination models may involve multi-echelon inventory theory, multiple decision makers, asymmetric information, as well as recent paradigms of manufacturing, such as mass customization, short product life-cycles, outsourcing and delayed differentiation.

5.2.2 Data & net-work

The spread of high speed data communications networks and computer technology has made it possible to manage the supply chain. Information is a key supply chain driver because it serves as the glue that allows the other supply chain drivers to work together with the goal of creating an integrated co-ordinate supply chain. Information is crucial to supply chain performance because it provides the foundation on which supply chain process execute transaction and managers make decision. The main purpose of use information Technology is-

- For Accurate information
- For in a timely manner
- Information for right kind

Information is used when making a wide variety of decision about each of the supply chain.

Facility, Inventory, Transportation & Sourcing is the key stages.

1. Facility- Determining the location, capacity and schedule of facility requires information on the tradeoffs among efficiency and flexibility, demand, exchange rates, taxes and so on. Bayer CropScience Ltd. use SAP software for demand. Side by side the information provided by the territory to set their import decision.
2. Inventory- Setting optimal inventory policies required information that includes the demand patterns, cost of carrying inventory, cost of stocking out and cost of ordering. For example, Bayer CropScience Ltd. collects detailed demand cost, margin and suppliers information to make these inventory policy decisions.
3. Transportation- Deciding on transportation network, routings, models shipments and vendors requires information including cost, customer location and shipment size to make good decisions. Bayer CropScience Ltd. uses information to tightly its operations with distributors. This integration allows Bayer CropScience Ltd. to implement cross-docking in its transportation network saving on both inventory and transportation cost.
4. Sourcing Information on product margin, price, quality, delivery lead time and so on are all important in making sourcing decision. It must be recorded in order to execute operations even once sourcing decision has been made.

5.3 Coordination in the supply chain of fungicide

These factors interact with each other in different combinations in different supply chains but the net effect is that they generate the wild demand swings that make it so hard to run an efficient supply chain. These factors must be understood and addressed in order to coordinate the actions of supply chain of fungicide. Bayer CropScience Ltd. considers five factors which needed to coordinate the action of supply chain of fungicide. They are:

a) Demand forecasting
b) Order batching
c) Product rationing
d) Product pricing
e) Performance incentives

a. Demand forecasting

Demand forecasting based on orders received instead of end user demand data will inherently become more and more inaccurate as it moves up the supply chain of fungicide. Companies that are removed from contact with the end user can lose touch with actual market demand if they view their role as simply filling the orders placed with them by their immediate customers.

- Demand data more & more inaccurate up the Supply chain (S/C)
- Companies up the S/C further distorts the demand picture and pass on the order accordingly

b. Order batching

Order batching occurs because companies place orders periodically for amounts of fungicide that will minimize their order processing and transportation costs.

- Companies tend to order in lot sizes determined by the EOQ
- Due to batching, variance is magnified as it moves up the S/C
- Ordering costs of fungicide can be reduced by using electronic ordering technology
- Transportation costs by using third party logistics suppliers

c. Product rationing

One common rationing approach is for a manufacturer to allocate the available supply of product based on the number of orders received. Thus if the available supply of fungicide equals 70 percent of the orders received, the manufacturer will fill 70 percent of the amount of each order and back order the rest. This leads distributors and retailers in the supply chain to raise their order quantities artificially in order to increase the amount of product that gets rationed to them.

- A manufacturer allocates available supply of product based on the number of orders received
- Artificial order quantity leads to “Shortage gaming”

d. Product pricing

Product pricing causes product prices to fluctuate, resulting in distortions of product demand. If special sales are offered and product prices are lowered, it will induce customers to buy more products or to buy product sooner than they otherwise would.

- Product pricing causes product prices to fluctuate, resulting in distortions of product demand.
- Instead of smooth flow of products through supply chain (S/C), price fluctuations can create waves of demand
- Answers generally revolve around the concept of “everyday low prices.”, customer perception

e. Performance incentives

These are often differing for different companies and individuals in a supply chain. Each company can see its job as managing its position in isolation from the rest of the supply chain. Within companies, individuals can also see their job in isolation from the rest of the company.

- Companies to structure incentives that reward on sales made each month or each quarter
- Driven by sales quota, not real demand
- Solution is activity based costing highlighting associated costs, S/C operations efficiency.

5.4 Information systems that support the supply chain of fungicide

Information technology can support internal operations and also collaboration between companies in a supply chain. Using high speed data networks and databases, companies can share data to better manage the supply chain as a whole and their own individual positions within the supply chain. Bayer CropScience Ltd. Bayer CropScience Ltd. uses some modern technologies which effectively support the supply chain of fungicide. These are

- **The internet:** The internet is the global data communications network that uses what is known as Internet Protocol (IP) standards to move data from one point to another. The internet is the universal communications network that can connect with all computers and communication devices. Once a device is hooked into the Internet it can communicate with any other device that is also connected to the Internet regardless of the different internal data formats that they may use.
- **Broadband:** Basically, this means any communications technology that offers high speed (faster than a 56Kb dial-up modem) access to the Internet with a connection that is always on.
- **EDI:** Electronic Data Interchange (EDI) is a technology that was developed to transmit common types of data between companies that do business with each other.
- **XML:** XML (e- Xtensible Markup Language) is a technology that is being developed to transmit data in flexible formats between computers and between computers and humans.

5.5 Data manipulation and reporting

Different supply chain systems are created by combining processing logic to manipulate and display data with the technology required to capture, communicate, store, and retrieve data. The way that a system manipulates and displays the data that flows through it is determined by the specific business operations that the system is designed to support. Information systems contain the processing logic needed by the business operations they support.

5.5.1 Several kinds of systems that support supply chain operations of fungicide:

- Enterprise resource planning (ERP)
- Procurement systems
- Advanced planning and scheduling
- Transportation planning systems
- Demand planning
- Customer relation management (CRM) and sales force
- Automation
- Supply chain management (SCM)
- Inventory management systems
- Manufacturing execution systems (MES)
- Transportation scheduling systems
- Warehouse management systems (WMS)

5.6 Import operations of fungicide of Bayer CropScience Ltd.

5.6.1 Definition of import

In carrying of anything from one country to author for sale is called import. Import means brining merchandise to the country from any place rest of the world, two things mainly involves with import of merchandise. Import trade of Bangladesh is controlled under the Import & Export control Act (IEC) 1950.

i. Carrying of commodities physically into the country.
ii. Making payments towards the lost to the merchandise and services connected with its dispatch to the importer.

In case of import, the importers are asked by their exporters to open a letter of credit. So that their payment against goods is ensured

5.6.2 Types of importer

Importers are those who are authorized by the import trade control authority i.e. CCI & E for import of goods essential for consumption or for production purposes.

There are mainly three types of importers.

i) Commercial importers
ii) Industrial importers
iii) Importers under wage earner scheme.

Bayer CropScience Ltd. import fungicide for the Commercial & Industrial basis. They commercially import fungicide than do few industrial work then spread them Bayer CropScience Ltd. channels for marketing.

5.7 Bayer CropScience Ltd. strictly follows the flowing import responsibilities on fungicide:

1. Firm order raised
2. Pro forma invoice
3. Insurance cover note
4. Complete procedure of L/C open
5. Collect psi id
6. L/C & psi-id number to send the supplier
7. Correspondence with the suppliers
8. Correspondent with bank & local psi
9. Correspondence with C & F agent
10. Collect shipping document from bank
11. Marine insurance policy
12. CRF report collect from bank
13. Obtain estimated custom duty from C & F
14. Custom duty procedure & send to C & F and bank
15. Procedure of goods release
16. Documents required for fertilizer release
17. Original documents/ L/C sent to C & F agents
18. Bill of entry sent to bank monthly basis
19. Address of all concern person: local/overseas
20. NOC from bank (if any require)
21. NOC from psi (if any require)
22. Time to time mail correspondence local and overseas respective area.

5.8 Import procedure

An importer is required to have the following formalities to import the goods-

- An account with a Bank
- Import registration certificate (IRC)
- Tax identification (TIN) number certificate
- Pro forma invoice/ Indent
- Membership certificate
- LCA (Letter of credit application) form duly attested
- One set of IMP form (four copies)
- Insurance cover note with money receipt
- Others

5.8.1 Letter of credit (L/C):

Letter of credit (L/C) is a payment guarantee to the seller by the buyer's bank. It is in fact, a credit contract/undertaking whereby the buyer's bank is committed (on behalf of the buyer) to place an agreed amount of money at the seller's disposal under some agreed conditions. If the conditions of the credit do not require for presentation of specified documents, it is called clean credit. On the contrary, if the presentation of specified documents is obligatory, the credit is called a documentary credit.

In an international business environment, buyers and sellers are generally unknown to each other. So seller of goods always seeks security for the payment of his exported goods. Bank gives export guarantee that it will pay for the goods on behalf of the buyer if the buyer does not pay. This guarantee is called letter of credit. Thus the contract between importer and exporter is given a legal shape by the banker by 'letter of credit'.

Buyers and sellers enter into contracts for buying and selling goods/ services and the buyer instructs his bank to issue L/C in favors of the seller. Here bank assumes fiduciary function between the buyer and seller.

To import, a person should be competent to be an 'importer'. According to import and export control Act, 1950 the office of chief controller of import and export provides the registration (IRC) to the importer.

After obtaining this, the person has to secure a letter of credit authorization (LCA) from Bangladesh Bank. And then a person becomes a qualified importer. He is the person who requests or instructs the opening bank to open an L/C. He is also called opener or applicant of the credit.

5.8.2 Parties to letter of credit

As per UCPDC – 500 terms and conditions of the L/C the seller is required to be routed through some intermediary banks in order to get his claim. So, we see that the following parties are involved to a letter of credit, namely -

Obligatory parties are

- Importer/ Buyer/Purchaser/ Applicant
- Opening bank/ Issuing bank
- Advising bank/ Notifying Bank
- Exporter/ Seller/Supplier/Shipper/ Beneficiary

Optional parties (In case of need) are

- Negotiating bank (Exporter's Bank L/C negotiating Bank)
- Confirming bank (for add confirming L/C)
- Paying/ Reimbursing bank

A. Applicant

The person or body (customer of the bank) who requests the bank (opening bank) to issue letter of credit

B. Opening bank/ Issuing bank

The bank that opens/issues letter of credit on behalf of the applicant/importer

C. Advising bank/ Notifying bank

The bank through which the L/C IS advised to the beneficiary (exporter)

D. Exporter

Beneficiary of the L/C is the party in whose favor the letter of credit is issued. Usually they are the seller or exporter.

E. Confirming bank

The bank, which is under instruction in the letter of credit, adds their irrevocable undertaking to that of the issuing bank. It is done at the request of the issuing bank

having arrangement with them. The confirmation constitutes a definite undertaking on the part of confirming bank in addition to that of issuing bank.

F. Negotiating bank

The bank which negotiates documents and pays the amount to the beneficiary when presented complying credit terms. If the negotiation of the documents is not restricted to a particular bank in the L/C, normally negotiating bank is the banker of the beneficiary.

G. Reimbursing/ paying bank

The bank nominated in the credit by the issuing bank to make payment against stipulated documents, complying with the credit terms. Normally issuing bank maintains account with the reimbursing bank.

5.8.3 Steps for import L/C operation of fungicide - 8 steps operation use Bayer CropScience Ltd.

Step 1 - Registration with CCI&E

- For engaging in international, trade, every trader must be first registered with the chief controller of import and export,
- By paying specified registration fees to the CCI&E. the trader will get [RC/ERC (Import/Export registration certificate), to open L/C with bank, this IRC is must.

Step 2 - Determination terms of credit

The terms of the letter of credit are depending upon the contract between the Importer and exporter. The terms of the credit specify the amount of credit, name and address of the beneficiary and opener, tenor of the bill of exchange, period and mode of shipment and of destination, nature of credit, expiry date, name and number of sets of shipping documents etc.

Step 3 - Proposal for opening of L/C

To have an import LC limit an importer submits an application to department to UCBL. The proposal contains the following particulars:

- Full particulars of the bank account
- Nature of business
- Required amount of limit
- Payment terms and conditions
- Goods to be imported
- Offered security
- Repayment schedule

Step 4 - Application by importer to the banker to open letter of credit

For opening L/C, the importer is required to fill up a prescribed application form provided by the banker along with the following documents:

Table- 01: Application criteria required by importer to the banker to open letter of credit

1. L/C application form	7. Authority to debit account
2. Filled up LCA form	8. Filled up amendment request form
3. Demand promissory note	9. IMP form
4. pro-forma invoice	10. Insurance cover note and money receipt.
5. Tax identification number (TIN)	11. Membership certificate
6.Import registration certificate	12. Rate fluctuation undertaking

Step 5 - Opening of L/C by the bank for the opener:

- Taking filled up application form from the importer.
- Collects credit report of exporter from exporter's country through his foreign correspondence there.
- Opening bank then issues credit by air mail/TEL EX/SWIFT followed by L/C advice as asked by the opener through his foreign correspondent or branch as the case may be, at the place of beneficiary. The advising bank advises the L/C to the beneficiary on his own form where it is addressed to him or merely hand over the original L/C to the beneficiary if it is so addressed.

Step 6 - Shipment of goods and lodgment of documents by exporter:

Then exporter ships the goods to the destination of the importer country. Sends die documents to the L/C opening bank through his negotiating bank. Generally the following documents are sent to the opening banker with L/C:

Table-02: Shipment of goods and lodgment of documents by exporter

1. Bill of exchange	6. Packing list
2. Bill of lading	7. Advice details of shipment
3. Commercial invoice	8. Pre-shipment inspection certificate
4. Certification of origin	9. Vessel particular
5. A certificate stating that each packet contains the description of goods over the packet.	10.Shipment certificate

Step 7 - Lodgment of documents by the opening bank from the negotiating bank

After receiving the documents, the opening banker scrutinizes the documents. If any discrepancy found, it informs the importer, if importer accepts the fault, then opening bankers call importer retiring the document.

Step 8 – **Retirement**

The importer receives the intimation and gives necessary instruction to the bank for retirement of the import bills or for the disposal of the shipping document to clear the imported goods from the customs authority. The importer may instruct the bank to retire the documents by debiting his account with the bank or may ask for LTR (Loan against trust receipt). When the officer thinks fit the application to open a L/C, giving the following entries creates the following charge

5.8.4 Accounting procedure in case of L/C opening

Table-03: Accounting procedure in case of L/C opening

Particulars	Debit/ Credit	Charges in taka
Customer's A/C	Debit	
L/C margin A/C	Credit	
Commission A/C on L/C	Credit	.05%
VAT	Credit	15% on commission
SWIFT charge	Credit	3000/-
Stamp	Credit	I50/=
Postage	Credit	300/-
DHL/Courier	Credit	1500

(Source: HSBC bank)

6.8.5 Presentation of the documents

The seller being satisfied with the terms and the conditions of the credit proceeds to dispatch the required goods to the buyer. Then he has to present the documents evidencing dispatching of goods to the negotiating bank on or before the stipulated expiry date of the credit. After receiving all the documents, the negotiating bank then checks the documents against the credit. If the documents are found in order, the bank will pay, accept or negotiate to HSBC. First of all it must be ensured that full set of documents as mentioned in the L/C has been received. Following documents are included, namely-

- Letter of credit
- Commercial invoice
- Bill of exchange
- Bill of lading
- Insurance cover note
- Certificate of origin
- Others.

Then HSBC checks the documents. The usual documents are-

- **Invoice:** The form containing information Exporter, Consignee, Carriage by, Vessel, Port Discharge, Container No Description of the Goods, Quality, Rate & Amount in USD.
- **Packing list:** Containing information package, description, weight
- **Bill of lading**
- **Transport agency** (Loading received):
- **Certificate of origin:** Containing information like Product name, Name of Vessel, No of Package, Port of loading & Discharge,
- **Certificate:** It declares that "We hereby said that we have completed with the following L/C clauses. It also contain Reference No, Order No, Bill of loading No, L/C No, IRC No, HS Code No, TIN No, VAT registration No.
- **LC (Letter of credit):** It contains the Name & Address of the industry unites, IRC No, Sector of Industry, Source of financing, Description of the item to be imported.
- **CRF (Clean report of findings):** It contain L/C Issuing bank name, No & Date, Buyer, Seller, Port of discharge, Pro forma Invoice/ Identity No, Container No, Serial No, Packing, Detailed report of goods inspection, Place of inspection, Issued By, Reference no, Comment about the quality of the inspected goods, Remarks & Specify which statutory requirements of import policy order in force has not been fulfilled
- **Pro forma invoice:** It's containing information Exporter & Consignee name, Pre-carriage by, Vessel No, Port of loading, Port of discharge, Final destination, Container No, Description of the goods, Shipments.
- **Shipping bill:** It contains the information Exporter & Consignee name, Customs House agent, Lorry/ Goods, Train & Wagon No, or By track, Marks No, Net wet No, Analysis for export value, Declaration.
- Non negotiable copy of bill of lading
- Bill of exchange
- Pre-shipment inspection report
- **Shipment certificate:** It contains invoice No & Date, B/L AWB No & Date, Vessel Name/ Flight No, Transshipment details, Additional details.

- **Insurance forwarding:** It contains order No, Bill of loading, L/C No, our control No, LCA form No, IRC No, HS code No, TIN No, VAT registration No, Insurance cover note No.

5.8.6 Payment procedure of import documents

This is the most sensitive task of the import department of any branch of Bank. The officials have to be very much careful while making payment. This task constitutes the following-

Date of payment

Usually payment is made within seven days after the documents have been received. If the payment is become deferred, the negotiating bank may claim profit for making delay.

Preparing sale memo

A sale memo is made at B.C rate to the customer. As the T.T & O.D rate is paid to the ID, the difference between these two rates is exchange trading. Finally, an inter branch exchange trading credit advice is sent to ID.

Requisition for the foreign currency

For arranging necessary fund for payment, a requisition is sent to the international department

Transmission of message

Message is transmitted to the correspondent bank ensuring that payment is being made.

5.9 Distribution

Distribution system of fungicides of Bayer CropScience Ltd. is a very complex affair because the supply is not to meet an immediate demand –it is to replenish stock at the immediate customer location, which in turn will be used to fulfill demand. But the complexity of the distribution network presents itself in the form of an opportunity – because the perfectly effective and efficient distribution system can be a strong comparative advantage. Bayer CropScience Ltd. uses Ship, Truck & package carrier for transportation of fungicide to the ultimate customer. A well designed transportation system network allows a supply chain to achieve the desired degree of responsiveness at low cost. Bayer uses direct shipment network option, the buyer structure his transportation network so that all shipment come directly from each supplier to Bayer location. Fungicides are not served directly to the customers; but via retailers. From the local warehouses of Bayer CropScience Ltd., fungicides go the various retail shops. Bayer CropScience Ltd. has employed salespersons who convince the retailers to put Bayer CropScience Ltd. products on display or sell to the retail shops. From the retail shops the fungicides finally go to the end user consumers. The company maintains strategically located sales centers in forty eight different locations across the country. It has developed an advanced distribution system through its more than 500 skilled and trained manpower and a large fleet over eighty vehicles and through its 8 strategically located depots. The maximum saleable quantity depends on the capability and efficiency of depots. Each depot is assigned to sale minimum 1, 00,000 quantities of products to distributors within two months. The distribution system is capable of handling continuing volume of diverse range of products from the various businesses. The company's distribution centers are highly streamlined, computerized and automated. The combination of this advanced function and multidimensional capabilities made it possible to handle hundreds of products efficiently.

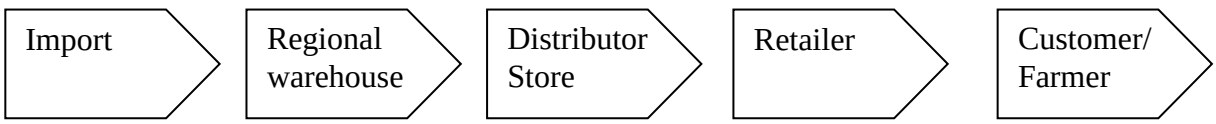


Figure-8: Distribution process of fungicide of Bayer CropScience Ltd.

5.9.1 Price difference of various actors in supply chain management of fungicide at Bayer CropScience Ltd.

Table-4: Price difference of various actors in supply chain management of fungicide at Bayer CropScience Ltd.

Actor	Product(fungicide)	Price (Tk)	Price differences (Tk)
Importer	Nativo 75 WG 10g	65	
	Folicur 250 EC 50 ml	100	
	Antracol 70 WG 100g	75	
	Dithane M- 45 100g	70	
	Secure 600 WG 50g	95	
	Luna sensation 500 SL	305	
Distributor	Nativo 75 WG 10g	77	12
	Folicur 250 EC 50 ml	105	5
	Antracol 70 WG 100g	85	10
	Dithane M- 45 100g	80	10
	Secure 600 WG 50g	105	10
	Luna sensation 500 SL	360	55
Retailer	Nativo 75 WG 10g	85	8
	Folicur 250 EC 50 ml	115	10
	Antracol 70 WG 100g	90	5
	Dithane M- 45 100g	85	5
	Secure 600 WG 50g	110	5
	Luna sensation 500 SL	385	25
Farmer	Nativo 75 WG 10g	90	5
	Folicur 250 EC 50 ml	130	15
	Antracol 70 WG 100g	100	10
	Dithane M- 45 100g	90	5
	Secure 600 WG 50g	120	10
	Luna sensation 500 SL	420	35

5.9.2 Percentage of price differences from importer to farmer

Table-5: Percentage of price differences from importer to farmer

Product (fungicide)	Calculation	Percentage
Nativo 75 WG 10g	(90-65)*100/65	38.46%
Folicur 250 EC 50 ml	(130-100)*100/100	30%
Antracol 70 WG 100g	(100-75)*100/75	33.34%
Dithane M- 45 100g	(90-70)*100/70	28.57%
Secure 600 WG 50g	(120-95)*100/95	26.32%
Luna sensation 500 SL	(420-305)*100/305	37.70%

Bayer CropScience Ltd. is a well known and established multinational company. It has a great reputation on fungicide business all over the world. They marketed various fungicides globally. In Bangladesh Bayer CropScience Ltd. mainly focus on fungicides for doing their business. From the following table, we observing that price differences of various fungicides i.e. Nativo, Antracol, Folucur, Dithen- M, Secure etc. are on average 32% from importer to farmer. Due to different intermediaries price of fungicides is little bit higher to the ultimate customers (farmers). A new product have launched in 2017 is "Luna sensation" that sells in the market at a higher price in every stage of distribution.

CHAPTAR SIX

Findings from Bayer CropScience Ltd.

6.1 Findings

The piece of information received by different secondary data sources and by discussion with different personnel of Bayer CropScience Ltd. reveals the following facts:

The general level of awareness of supply chain management issues amongst the employees of Bayer CropScience Ltd. is low to medium-low. Most of the employees do not know about the issue. There is no writing published in Bayer CropScience Ltd. journal specifying Supply Chain management of fungicide.

All the processes equivocally expressed that Bayer CropScience Ltd. should take steps to strengthen and enrich existing activities for the benefit of Supply Chain and the business. As a responsible operating or end-market company, Bayer CropScience Ltd. should take Supply Chain management initiatives in issues. Their arguments are shown below:

- More involvement and monitoring needed
- Present activities are not visible
- The base of present activities is weak. We should establish Bayer CropScience Ltd. as a benchmark
- We should increase both internal and external awareness

Bayer CropScience Ltd. use SAP software for demand forecasting of fungicide. Side by side the information which provided by the territory is for setting their import decision. Bayer CropScience Ltd. collect detailed demand cost, margin and suppliers information to make these inventory policy decisions. Bayer CropScience Ltd. uses information to tightly its operations with distributors.

Bayer CropScience Ltd. basically conducts import base business. They import fungicides from Germany, India, Thailand & some others country. Domestically imported bulk quantity produced are packed & distributed by the help of the distribution channel.
They take service from Reliance Insurance for insurance purpose. And for all kinds of banking work they perform with Standard Chartered Bank & HSBC Bank.

Bayer CropScience Ltd. maintains their inventory on the Crop Season base. Every crop needs specific Agro chemicals. So, depending on the crop calendar Bayer CropScience Ltd. import product & keep it on the ware house.

Bayer CropScience Ltd. selects eight regions for their facility layout. There they set warehouse to maintain their inventory & distribution. The regions are Mymensingh, Bhairab, Commilla, Jessore, Bogra, Rangpur, Rajshahi, Faridpur. Those different regions help Bayer CropScience Ltd. for proper marketing & Maintain the whole supply chain.

A well designed transportation system network allows a supply chain to achieve the desired degree of responsiveness at low cost. Bayer CropScience Ltd. uses direct shipment network option, the buyer structure his transportation network so that all shipment come directly from each supplier to Bayer location.

The Key Stake Holders of Bayer are Suppliers, Marketers, Dealers, Distributors, Agents, Transporter, Consultant and Clients, Service Providers (Business Partners or Associates). The company can appoint any person as its Agent (s), Distributor (s), Dealer (s), Retailers or Representative (s) for the sales and distribution of the products or sell the product directly to the customer.

CHAPTAR SEVEN

Recommendations & Conclusion

7.1 Recommendations

Awareness building is the primary job at present. Besides changing some setup of the warehouse and transportation system as well as the whole operation, awareness will play a vital role in a Supply chain approach. In order to create and increase awareness among the company, Seminar, VDO clippings, Symposium, Leaflets, Workshops, Awareness campaign, etc. could be organized.

There has to be a supply chain action plan. A responsible team of Bayer should be engaged in coordinating the different activities in their respective process. Primarily the team will create more awareness and internalize the issue to the company. The responsibilities of the team would be:

- Identify the issue in detail
- Link the issue with each process
- Familiarize with the process, product, business and distribution
- Pursue business value addition activities
- Formulate policy and action plan
- Driving that action plan
- Practice and monitoring
- Identify the areas of improvement in respect of sustainable chain approaches
- Motivate and influence relevant people in implementing new / innovative ideas
- Full-time liaison and involvement for all related activities expect.

7.2 Conclusion

Though in some cases the costs involved in a supply chain management are high compared to conventional supply chains, consumer conscience on environment helped organizations create a brand image and in turn gain a unique competitive edge.

By practicing just a fraction of Supply chain concepts in supply chain management, many commercial firms have achieved success. The most important considerations for warehouses are, first, their cost per square meter, followed by their efficiency and flexibility. Through all of that, operational costs are constantly being influenced by rising energy prices and external factors.

These new operations have altered the traditional supply chain that most organizations have grown accustomed to. These innovations are expected to drive the embracement of technology even in the recession period. Methods for determining a successful supply chain management are new and are not fully developed. However, organizations can effectively and efficiently hold the supply chain to face the shocking future challenge.

This report shows that, first and foremost, companies will have to try and use the supply chain, which is the system that they don’t have to use at all; this will require taking an integrated approach to new construction projects.

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Appendices

Distributor Screening Form- New customer

1 Customer Name:

2 Customer Address (Official):

Street	
City & District	
Cust Code	

3 Status of the Firm: (Pack Tick):

Sole Proprietor		**Residence Telephone**	
Sole Proprietor		Office Telephone	
Partnership		Fax No	
Pvt Ltd Company		Contact Person	
Public Ltd Company		Mobile No	
e-mail ID			

4 Year of Establishment:

5 Proprietors/ Partner/ Director:

Status	Name	Residential/ Address	Telephone No

Licence & Registration:

6 Local Tin No:

Copy Recd Y/N **Valid Up**

7 Central Tax No:

Copy Recd Y/N **Valid Up**

8 Pesticide Licence No:

Copy Recd Y/N **Valid Up**

9 Seed Licence No:

Copy Recd Y/N **Valid Up**

10 Nature of Business:

N/A

BUSINESS DETAILS

11 Major Products: Nature of Business (Product line handled. Name of Company, Turn over)-Last year

Product Line	Com 1 (Name)	To Value	Com 2 (Name)	To Value	Com 3 (Name)	To Value	Other Companies	To Value
Pesticide								
Seed								
Fertilizer								
Others								
Total								

12 Major of Product Sold:

Product	1st Year	2nd Year	Last Year
Total Value TK			

13 Name of Transportation

Cholco 1	
Cholco 2	
Cholco 2	

INFRASTRUCTURE

14 No of Salesmen | **13. No of Vehicles**

15 No of Dealers | **14 (a) No of Retailers**

16 Total Retail Businesses

TK | **% Retail Business**

17 Godown Areas

Sq. Ft

18 Address of Godown

19 Condition of Godown

BUSINESS POTENTIAL RECOMMENDATION

20 Distributorship Recommended for business Segment (Please Tick Any One Option)

Crop Protection Only	
BioScience Only	
Crop Protection & Bio Science	

21 Business Potential for BCS with the party in TK '000'

Business Segment	Turnover In 1st Year	Turnover In 2nd Year	Turnover In 3rd Year
Crop Protection			
BioScience			
Total			

22 Major Product accepted to be sold by the party of BCS

SN	Product Crop Protection/ BioScience	Crop Protection (Kg/L)			BioScience (Kg/L)		
		1st yr	2nd yr	3rd Year	1st yr	2nd yr	3rd Year
1							
2							
3							
4							
5							
6							
7							
8							
	Total Value TK '000'						

23 Total sizes of Agrochemicals/ Seeds Market for Area Covered by the Proposes Distributors

	Acreage	Value TK '000'
Crop protection		
Seeds		

24 Current Markets Share of Distributors (in %)

Crop Protection | **Seeds**

25 Expected Market Share of BCS Business (%)

Crop Protection | **Seeds**

26 Party's expected Investment in BCS business

Crop Protection TK '000' | **Seed**

27 Is the Party a replacement of any existing Distributors in area?

Y/N

28 If yes, Name of the Existing Party & Codes

29 Has the existing party settled all its dues

Y/N

30 If dues not settled, please provide details of reason for non-settlement and action plan to recover the amount:

FINANCIAL DETAILS

31 Details of Financial Statement enclosed

	Copies Attached Y/N
Profit & Financial Statement enclosed	
Balance Sheet Last 3 years	
Banker Certificate	
Redd. Partnership Deeds	
Certification of Incorporation. MOA & AoA	

COLLATERAL SECURITY

32

Is the party ready to give Bank Guarantee **Y/N** **Value**

Is the party ready to give personal guarantee, increase of sold proprietor **Y/N**

Is the party ready to give third Guarantee **Y/N** **Value**

33 Cheque signing Authorities

Name & Status of the Signatory	Sample Signature

34 Confirmation of Cheque Signing Authority

Limited Company	**Board Resolution Copy**	**Y/N**
Partnership Deed	**Banker Certificate**	**Y/N**
Sole Proprietorship	**Banker Certificate**	**Y/N**

35 Banker Details

		Type of Bank	
1 Bank Name			
Address		**Pin Code**	
City		**Phone No**	
State		**Saving A/C No**	
Cash Credit Limit			

		Type of Bank	
2 Bank Name			
Address		**Pin Code**	
City		**Phone No**	
State		**Saving A/C No**	
Cash Credit Limit			

36 Trade Reference (Please give at least one form our Industry)

1 Company		**Phone No**	
Address			
City		**Pin Code**	
No of years in business with this company			
Annual Turnover with the Company last year			

2 Company		**Phone No**	
Address			
City		**Pin Code**	
No of years in business with this company			
Annual Turnover with the Company last year			

3 Company		**Phone No**	
Address			
City		**Pin Code**	
No of years in business with this company			
Annual Turnover with the Company last year			

ASSET DETAILS

37 Detailes of Assets owned (fig in lacs)- copies of property documents to be attached

1 No of Four wheelers		**2 No of Wheelers**	
3 Value of own house/ flat		**4 Value of other Property**	
5 Value of investments in bond, Fixed deposit etc		**Copy of Property Documents attached Y/N**	
TOTAL VALUE OF ASSETS OWNED			

38 Are Stock hypothecated with banker? If yes, what is the hypothecated amount?

Tk	

Authorized Signature **Rubber Stamp of the Firm**

Name……
Destination……..

…. . ……FOR OFFICE USE……..

Proposed By Regional Manager (RM)

Geographic Area for Appointment		**Is the Distributorship Appointment Approve by Manager, Distribution & Logistics (Y/N)**	
Territory			
Region			
Credit Limit Proposed By RM (Tk. 000)		**Credit Limit Recommended by Zonal Manager (Tk. 000)**	
Market Reputation Any Litigation/ Sispute with any Company			
RM Name		**Name of the Zonal Manager**	
Signature			
		Signature	
Name of Manager, Distribution & Logistics			
Signature			

Bayer product list (Update, August 2016)

Group product

Product Name		Price USD ($)/ Per Unit	Crop
01	Admire 200 SL	16.70	Rice, Bean, Cotton, Sugarcane, Tea, Bringal, Potota
02	Antracol 70 WP	6.30	Potato, Onion, Tea
03	Arozin 30 EC	5.30	Transplant Rice
04	Belt 24 WG	48.07	
05	Basta 15 SL	7.40	
06	Baycarb 500 EC	4.85	
07	Cupravit 50 WP	7.92	Citrus, Pulse & Oil Seed, Chili, Groundnut, Tea, Rice
08	Decis 2.5 EC	6.60	Cotton, Mango, Tea, Brinjal
09	Hinosun	7.35	
10	Ethrel 48 PGR	11.00	Development of fruit, Ripenning fruit and attractive color
11	Folicular 250	14.19	Rice, Banana, Onion, Tea
12	Lebaycid 50 EC	6.90	Rice, Sugarcane, Citrus, Mango
13	Melody DUO 66.8 WP	9.24	Potato, Tomato
14	Planofix	1.65	Hormone uses on vegetables & fruits. Development of flower & fruit, restrain & fruit dropping
15	Rovral 50 WP	15.29	Onion, Mustard
16	Sencor 70 WG	23.32	Potato
17	Secure 600 WG	14.45	Potato, Cucurbits
18	Sevin 85 SP	8.36	Rice, Jute, Pulse & Oil Seed
19	Thiodan 35 EC	4.40	Tea
20	Top Star 400 SC	24.11	Rice, Potato, Onion
21	Oxadiazon Technical	25.20	
22	Solvesso 150	0.67	
23	Cyclohexanon	1.10	
24	Rhodacal 70	2.90	
25	Soprophor S/25	3.30	
26	Antimouse 454	5.90	
27	Confidor	60.60	
28	Larvin WP 75	11.00	
29	Nativo 75 WP	18.15	

None-group product

01	**Curaterr 5 G**	**0.98**	
02	Ronovit 80 WG	1.25	Tea, Jute
03	Wuxal Super	1.55€	Elimination of Nutritional deficiency for growth, leaf, color, in paving the quality of fruits of smoth growth fot cereal crops stop flower-fruit dropping & in crop yield.
04	2, 4 D Amine	4.00	Tea, Rubber
05	Dithene	5.23	Potato, Jute, Groundnut