THE IMPACT OF ORGANIZATION DEVELOPMENT INTERVENTION ON LOGISTICS SUPPLY CHAIN

by

MANOROT VITTAYAPIPAT

A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of

Master of Management

Graduate School of Business
Assumption University
Bangkok Thailand

November 2002
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ABSTRACT

Over the last four decades, the discipline of business logistics has advanced from the warehouse and transportation dock to the boardroom of leading global enterprises. Pharmaceutical business is the same as another logistics process, which evolves from time to time.

Pharmaceutical business logistics includes all the activities to move medical product and information to, from, and between members of a supply chain. This research tries to combine the theory of supply chain management and organization development together. The purpose of this study is to provide the best business practice with an OD Process as applied a pharmaceutical business, and helps them to streamline their process. The supply chain provides the framework for businesses and their suppliers who join to bring goods, services, and information efficiently to ultimate consumers. While organization development provides the solution or tools to improve organization related factor and if necessary, to reengineer the process of the organization. These two processes can be called as logistical management. This kind of management concept presents the mission, business processes, and strategies needs to achieve integrated supply chain management.

The researcher intended this study to achieve three fundamentals objectives: (1) presenting a comprehensive description of existing pharmaceutical logistical practices within the private and public sectors of the society; (2) describing ways and means to apply organization development intervention principles to improve the whole organization and their process to achieve competitive advantages; and (3) providing a conceptual approach for integrating logistics as a core competency in enterprise strategy. The research model that use throughout this research was the pre
and post organization development intervention comparison model. The objective of
this model is to determine the gap between as-is situation and to-be business process.
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CHAPTER 1
GENERALITIES OF THE STUDY

Introduction

Globalization and economy recession are felt all over the world. Most if not all business organizations affected have to change or adept themselves not only for survival but also to be successful in the highly competitive market. The way managers manage their organizations and the way they influence their subordinates to get their cooperation can affect the satisfaction of employees and have a major impact towards the success of the organization. However, for pharmaceutical business, business recession does not have too much effect in this specific industry.

Because medical is one of the major factor in human being life, every illness need medical to recover them. Focus on industry specific, not only well-managed organization but also effective logistic supply chain is considered as a key management success factor for these organizations. Supply chain management is a newly major concept which many organization are focus right now especially for logistic field. Manager should manage the diversity of their resources and change them to satisfy the requirement of their customer which lead to increase in company profitability.

Even though this research is focused on the organization development for the research's company, the researcher also further analyzes the business process that related to organization development. Not only to know what is the major obstacle in their business but also should know about how they process their business; their business process – pharmaceutical supply chain. Generally, logistics is unique for each
organization. It is a continuous resource requirement process and never stops. If you do a business, more or less you cannot avoid related to logistics like sales transaction, inventory process or distribution system. Logistics is happening around the globe, twenty-four hours of every day, seven days a week during fifty-two weeks a year. Few areas of business operations involve the complexity or span the geography typical of logistics. Logistics is concerned with getting products and services where they are needed when they are desired. Most consumers in highly developed industrial nations take a high level of logistical competency for granted.

Modern logistics is also a paradox. Logistics has been performed since the beginning of civilization. However, implementing best practice of logistics has become one of the most exciting and challenging operational areas of business and public sector management. Logistics involve the integration of information, transportation, inventory, warehousing, material handling, and packaging. All of these areas of work provide a variety of stimulating jobs. These jobs combine to make overall logistics management a challenging and rewarding career. Because of the strategic importance of logistical performance, an increasing number of successful logistics executives are being promoted to senior management.

The excitement and newness of logistics stem from a combination of traditional work areas into an integrated strategic initiative. There are several factors that impact the effectiveness and efficiency of logistics supply chain like organization culture, the structure itself, company mission, management function, company policy, the information technology and the usage of their resource. Within the firm the challenge is to coordinate individual job expertise into an integrated competency focused on servicing customer. In a strategic sense, the senior logistics officer leads a boundary-spanning initiative to
facilitate effective supply chain relationships. The excitement of contemporary logistics is found in making the combined results of internal and external integration one of the core competencies of an enterprise. Pharmaceutical business supply chain is the same as the other logistics supply chain business; the methodology to integrate the organization's resource with organizational objective by setting the corporate culture is the most important things that the company should do it.

Currently, the business climate in Thailand is stressful and more competitive. Organization in Thailand like nations are breaking up and rethinking how they are governed. Globalization and recovery from recession of Thai economy have changed organization not only for survival but also to be successful and competitive which others. These factors have impact not only in general business but also in pharmaceutical business. For organizations to be successful, managers need to get the high coordination of all employees. Build the supportive organization culture, flexible redesign of organization structure and employee job role to cope with the fast changing environment, adjustment and redesign the management plan and control the company's resources to cope with the business crisis are the most important things that the top management should take into consideration. (Bangkok Post, 2002: 1)

Organization Development (OD) as a body of knowledge and practice is very important for Thai companies. Because of business recession, every company tries to keep the number of their employee to a minimum but still increase the organization productivity. Organization development intervention (ODI) and information technology (IT) are now the popular techniques that widely used by many organization. OD intervention is a set of decisions and actions that consist of activities; processes and
strategies that point out organization evolution are better than organization revolution. OD engages people in an organization planning and implementing change.

Information technology is advancing at a phenomenal rate in term of speed and storage capability with simultaneous dramatic reduction in cost and size. While the current state of information technology is continuously evolving, several advances significantly influence logistics operations as well as organization development theory.

*The Diethelm & Co. Ltd. Thailand*

Let's focus on the researched company, like most parts of the Diethelm group; Diethelm & Co Ltd Thailand has a rich and proud history. Established in 1906, Diethelm Thailand was one of the first foreign trading companies in Thailand and the second oldest operation in the Diethelm group after Diethelm Singapore. From humble beginnings and some bold decisions made over time, Diethelm Thailand is now the largest operation in the Diethelm group of companies and the foremost distributor of choice in the country. There would not be a product or service that people in Thailand use, or have used, that has, or has had, some association to Diethelm. (Diethelm Keller Group brochure, 2001: 3)

For nearly a century, Diethelm & Co Ltd has served as Thailand's foremost distributor in all mainstream businesses it has entered. They have been able to sustain their successes and steadily grow their business because they never lost sight of their mission—best service.

A hundred years in Thailand has given them a deep insight into the country and all its economic moods. It has sharpened the prophetic ability that helps them determine what services may be needed in five, ten years down the road. It has kept us alert to prepare for and accept changing innovative technology. This has allowed us to continuously improve their services.
Pharmaceutical and healthcare products have consistently been among the most significant business segments of Diethelm Keller’s operations in Asia. Diethelm Healthcare Division is an integrated service provider for the healthcare industry.

Diethelm Pharmaceutical division is the number 1 healthcare logistics distributor in Thailand, providing services to hospitals, clinics, doctors and drugstores throughout Thailand, with almost 100 years of experience in this complex and changing market. Diethelm Pharmaceutical division distributes not just pharmaceutical products, but also medical instruments, diagnostic equipment, dental supplies and equipment, health products and veterinary medicines.

Diethelm Pharmaceutical division represents over 50 international pharmaceutical and healthcare companies, including 5 of the top 10, according to current IMS and PPA figures.

Diethelm has been in Thailand since 1906, and Healthcare has always been an important part of its business as distributor and toll manufacturing. This long history means that Diethelm understand the market and that they can assist and advise in dealing with Government departments, FDA, hospitals, associations and NGOs who are all involved in the healthcare industry.

Diethelm Pharmaceutical division is able to offer a wide range of services, tailored to the needs of each supplier, rather than a standard system. These services include warehousing, distribution, collections, marketing, contract manufacturing, importation, regulatory services, legal advice and Human Resource Management.

Diethelm Pharmaceutical division is led by Mr. Renato Petruzzi who has lived in Thailand and worked in the Thai Pharmaceutical industry for over 30 years, and brings that wealth of experience into the partnership between Diethelm and it’s Principals. He is
supported by a team of managers who also have considerable length of service with Diethelm; the majority of who are pharmacists, many of who have worked for the Principals before moving to Diethelm.

From the Head Office in the center of Bangkok on New road, to the world-class distribution Center on the outskirts of Bangkok and its 5 regional depots Diethelm Pharmaceutical division is able to provide rapid and efficient services to all of it’s customers throughout Thailand.

Over 100 international names in the pharmaceutical and healthcare industries put their complete trust in Diethelm Keller Pharmaceutical division. Their dedication and commitment have always been the basis upon which long-term relationships are built. Diethelm Pharmaceutical division offers full transparency, with performance indicators on key services. Their track record of success is the best in the industry. However, what matters most to Diethelm Pharmaceutical division is that they satisfy their customers’ expectations, and that they are perceived as a partner of excellence.

Diethelm Pharmaceutical division’s activities also span 13 countries, and while each country is distinctly different even from the closest neighbor, their businesses throughout the region share one thing in common: a dedication to providing top-rate services. For over a century, Diethelm Keller operations have been well recognized as one of Asia’s service industry leaders in the healthcare sector, particularly for distribution. They have been able to build on their success and steadily grow their business because they never lost sight of their mission. At Diethelm Pharmaceutical Asia, their service transcends all cultures and languages in the pursuit of one common goal: “excellence”.

The synergistic fit that inspired the Diethelm Keller merger has also led to the formation of Pharmaceutical Asia. Set up in October 2000, Diethelm Keller
Pharmaceutical Asia Regional Office in Bangkok coordinates their regional activities with a view to developing new businesses and sharing and developing competences across countries.

Diethelm Keller Pharmaceutical Asia is determined to leverage its combined strength in order to support the businesses of the more than 100 principals they represent. They aim to be recognized as the leading integrated service provider for the healthcare industry in Asia.

Diethelm Pharmaceutical division's supply chain management solutions plan to range from single-country distribution services to regional supply chain solutions. Their regional manufacturing site, Olic (Thailand) Co., Ltd., is a hub for tailor-made services across Asia. Their ambition is to enable their customers to improve service levels and efficiencies throughout their supply chains. Their Pharmaceutical alliances offer a number of services, particularly in the area of promotion. Their mission is to support their partners in optimizing their commercialization process for core and non-core products. Their service range allows Asian healthcare companies to manage every aspect of their businesses successfully.
Although Diethelm pharmaceutical division is a cash cow entity for Diethelm Keller group in Thailand since 1998, there are also some business concerns or management issues that still need to be revised and the management also would like to be revised. As mentioned above Diethelm is a big organization that separate into several business unit. Each business unit are broken into segments, each segment have their own business methodology. It is totally decentralized according to product departmentalization and not standardized for the whole business units. The total decentralize and huge organization structure effect the whole pharmaceutical business in term of slow down the decision making process, slow down the whole business process and also create the competitive environment. This is the impact from Diethelm organization culture that the degree for the division communicates to other division is quite low. The norm of the organization is only to generate the high profit for its own business unit and does not synchronize with another unit in appropriated level. Also management for each division
possesses high self-confidence and does not want to follow the other. The Diethelm culture is quite high in individualism, each division try to make as much as possible profit for his or her own department and do not care about the other. They also see the other, as the competitor in the market although the product they sold is different in distribution channel. How to manage organization diversification is another practice that has to take into consideration because Diethelm is a multicultural organization. The organization’s diversity is not only focused on the human resource themselves but also diversity in term of their business specifics for each division. Job role in Diethelm is also quite confusing due to complex organizational structure. Some employee will do the 100 percent same work with another employee which lead to unclear organization; one staff may have more than one boss they should deal with. Some job role of some employee is not clear and raises the competitive environment within the division. Every staff realize that another employee is the competitor in the pharmaceutical market because Diethelm is the trading company so there is a change that one employee can sell the competitive product for another employee. This causes the problem in the company business chain because these create the obstructive environment within the same division.

Also in Diethelm, the most critical process for logistic supply chain is the same like another company logistical process that mostly concentrates in inventory control system. Because if the organization can minimized their inventory control process, organization can save a lot of money which lead to good organization status as shown in organization’s profit and loss statement. So effective inventory management can effect the whole pharmaceutical supply chain in the high degree when compare to another process of logistical. For Diethelm, the inventory control is still need to be improvement. The database of stock inventory is decentralized, sales order generated from another
system but the picking process is done in another system. These cause a huge back order for Diethelm, many employee used to clear this back order that leads to ineffective human resource management. All of the issue mention above can be categorized as organizational related concern.

Managerial functions are also another issue that will be focused in this research. All the managerial functions include planning, organizing, leading and controlling process, which has to be revised. Sometimes management decision is take a long time and cannot be on real time to keep pace with the fast changing situation because they have to cover the effect to the other division. Almost the document flows within the organization is paper-based and lead to slow down business process and effect to the not up to date business strategy. Because Diethelm major business is pharmaceutical supply chain that is a risky business industry, it directly affects to consumer’s health. A little change in active ingredient can cause a lot of change in finished medical. There is another risk that cause form external party that the organization should deal with mostly on political institute or policy and government entity such as Food and Drug Association or Custom clearing party especially for narcotic drug. To minimize all of the risk is another concern for Diethelm management.

In all logistic supply chain includes Diethelm, the aim of the supply chain process is to maximize the output and minimize the cost of the product through efficient manufacturing process. If the organization can do this, the organization can maximize their business process. That is the reason why the total quality management (TQM) is very important to measure the effectiveness and efficiency of logistical supply chain. This is other research variable for Diethelm. This is another view of business issue within
Diethelm Keller group that needs to be revised and to be categorized them as management related concern.

**Research Objectives**

1. To find out and analyze the critical areas for organization development of pharmaceutical supply chain, using an action research process of diagnosis, OD intervention (ODI) design and implementation and post ODI intervention.
2. To determine the gap between as-is situation and the intended to-be scenario as a basis for OD intervention design.
3. To determine the appropriate organization development intervention tools based on the identified problem at the diagnostic phase, which can be implemented for improving the whole supply chain business process.
4. To identify the results of organization development intervention and the monitor the processes of implementation to enable the company management to make adaptive and corrective actions.

**Statement of Problems**

The study is focused on the following problem:

"Do the individualism and no inter-group collaboration culture, the unclear and complicated company structure, vague employee job role, incorporative management process and unclear, ineffective inventory management and inefficient total quality management process for each company member impact the effectiveness and efficiency of Diethelm Pharmaceutical business process and information flow within the supply chain."

Specifically this study sought to answer the following research questions which categorized as pre-ODI, ODI itself and post-ODI:
Pre-Organization Development related question

1. What is the impact of individualism and destructive organization culture towards pharmaceutical business process and their functionalities?

2. What could build the supportive organization culture between each department to benefit the whole organization?

3. Does complicated organization structure and product departmentalization cause the problem in the information flow of the company?

4. What could simplify the organization structure to enhance supply chain process?

5. Why vague employee job description causes the redundancy in the employee routine work?

6. Why unclear job role for each brand manager cause the competitive atmosphere within the Diethelm pharmaceutical division?

7. What is the impact of the inventory management on the whole pharmaceutical supply chain?

Organization Development Intervention related question

1. What and how can we create the corporative environment among the brand manager?

2. What and how can we reduce the current workload by redesign the organization structure and job role?

3. What and how information technology help to facilitate and standardize all inventory control process?

4. What can and how to streamline cross division business and synergies the managerial function of all business division for group wide benefits?
5. What and how risk management provides the methodology or strategy to deal with the uncertainty?

6. Can ODI help the organization to tune the idea of every member towards the effective total quality management process?

Post-Organization Development related question

1. What is the effect of organization development intervention tools towards Diethelm's organization culture, organization structure and management related factor?

2. What is the impact of total quality management process towards the pharmaceutical business process?

The following are the substantive research hypothesis, which this research intended to test. The hypothesis have been categorized as ODI process and their indicator,

**ODI Process**

1. Better group collaboration cultural change creates corporative and supportive organization culture for Diethelm?

2. Synergy creates among multicultural group of employee after organization culture change.

3. Organization redesign reduces the complicate for Diethelm organization structure and optimizes the information sharing.

4. Job redesign definitely defines the new and clearer job descriptions for Diethelm employees in term of job enrichment rather than job enlargement, specialist and skill for each employee are created.
5. Enterprise resource planning and supply chain management improve and streamline the inventory control process and increase customer satisfaction by giving online/real time information to support decision-making

*Indicators of the ODI process*

1. No company red tape among top management and their subordinate after cultural change.

2. Centralized decision-making for critical business and decentralized for routine business process are set after structural redesign.

3. Top management and brand manager can predict better forecast and well planning towards fast changing and uncertainty situation.

4. Better just-in-time inventory system, increased work center capacities and minimized production variance are the result after tuning all employees about better total quality management.

**Organization Development Intervention Objectives**

*Phase I – Pre – ODI (As Is Analysis)*

1. To find out where critical business process and key managements which need to be improved for the whole organization benefit.

*Phase II - ODI process (OD Implementation)*

1. To design and propose the synergism organization culture for become more corporative.

2. To simplify the organization related factor in order to optimize sophisticate management process.

3. To determine the modern enterprise resource planning in order to reduce risk inherent in the current business process.
business in Thailand to have an overall picture of pharmaceutical supply chain process, know what is the major criteria for good supply chain, how to integrate and how to manage them to satisfy customer requirements.

ODI can also use to improve the current business; the target of the intervention is to bring the change to the organization. Generally this intervention cause the organization transformation that lead to the success of the whole business in the future. The long term target of this study is to build the capability of this researched organization to become what is called learning organization

Scope of the research

This process is focused on Diethelm pharmaceutical division, which does business about manufacturing and trading medical product. The research is structured 3 phases are pre-ODI phase, Organization development phase and Post-ODI phase. This research covers only the main variables identified under pre-ODI variables. The reason to do this is to compare the change of each research variable in current situation and the situation after implementing of ODI. While organization development intervention is considered as the major phase of the research, and all the sub-variable in pre and post ODI is considered as the main dependent variable. The pre-ODI variable and post-ODI variable should be the same so that the effect of the organization development intervention can be measured. The sub-variable under pre and post ODI are categorized as organizational related and management related. For the organizational related, the research will focus on organization culture specifically in inter-group norm, organization structure, job role and critical organization process specifically in inventory management.
During the pre-ODI phase, the researcher will find out what is the object that needs to be changes or improved for each variable. In the part of management related, the research will focus on all managerial function, risk management and total quality management process. During the pre-ODI phase, these management related also be find out what is the process that need to be improved for better management planning, decision-making and also process controlling. For the organization development intervention, the research will mostly focus on organization transformation to change the organization culture, structural redesign; job redesign, human resource and workforce diversify intervention for better managerial function, open system planning and risk management to minimize uncertainty, quality circle and high involvement process to improve total quality management. However, these can be done because a lot of support from top executive in researched company.

However, the research also use information technology intervention like enterprise resource planning and supply chain management concept to facilitate better inventory control and optimize the effectiveness of the whole group of company. In other word, streamlined logistics supply chain’s competency is the major critical criteria of measuring the effects of the organization development intervention and information technology for a supply chain business in Thailand. But to measure the effect of how well the logistical supply chain after implementing ODI is out of scope of this research because this research is only focus on some variable that affect the supply chain. So it’s quite hard to prove that the success of the whole logistics supply chain comes from OD implementation. There are another factors that related to these, ODI are a set of instrument that have potential to improve the supply chain process. The main objective for doing the post ODI phase is to compare the changes or gaps between the as-is business process and to-be business
process. However, change can be both positive, negative and remain unchanged for some variables which depend on how success of each OD intervention.

This paper concentrates on the logistics service business in Thailand. The researched company is Diethelm Pharmaceutical, which is the researcher’s current client company so getting the access to the researched company is not the issue during this research. The researcher is the employee of Symphony Consulting Alliance (Thailand) Co., Ltd. which currently is officially consulting firm provided consulting service to Diethelm Pharmaceutical division in part of change management and business process. So gathering and access the confidential information of the research organization is not the limitation of this research. Almost 80% of Diethelm Pharmaceutical division’s customer or which Diethem called them as principal is based on pharmaceutical industry like Roche, BDF, and Janssen Cliag.

This study includes information from both staff of the company that includes trading business and also staff in part of toll manufacturing and some of their customer. This research will also cover the different departments of the company.

As mention above, this research focuses on both organizational related and management related. For organizational related, the research mostly focus on all the entity within the organization like how the organization was departmentalized, what is the general culture or group norm of the organization and why employee socialized with these norm. This research also focuses on routine working style of all company employees like how to manage the routine work, how to balance their workload and how to improve them. This research also covers how brand manager deal with their customer which include their behavior, communication technique, marketing strategy and negotiation method. Further more, this research also focuses on how top executive
forecast to the future and accept to change or how they organize, control and renovate their business process. Information technology is also use as a change agent that drives to organization evolving.

The location of study in this research is head office of Diethelm (Thailand) Co., Ltd, head office of Diethelm Pharmaceutical division and manufacturing plant of Olic (Thailand) Co., Ltd. The first office is located at ground floor Diethelm Tower B in the central of Bangkok and total members in office are about 5 persons who mostly consist of top executives. The second office is located at 2 floor Diethelm Pharmaceutical division on New Road and total members in this location are about 15 persons who consist of top executive, executive brand manager, brand manager, electronic data processing staff, financial and administration staff. The last office is located at ground floor Olic (Thailand) Co., Ltd., Bangpa-In which mostly consist of supply chain manager, production and warehouse staff. However, these staff also work on non-fixed location depends on their business activities.

**Delimitation of the study**

The paper limitations actually are the factors that limit the scope of the study. They may be the factors that can be controlled like time but also the factors that beyond the control of the researcher like several company sites. The study covered only the pharmaceutical supply chain business in Thailand especially Diethelm Pharmaceutical division which major business is healthcare industry sector. As mention above, logistics is unique which more or less different among different industry sector. However, only organizational and management related part of the company is under study. The study actually is not focus to the whole process of logistics supply chain like what the component of the supply chain is and how they work. The selected companies are the
researcher’s client company and respondent from researcher’s key users. Finally, majority of the study is only focused on the staff that related to pharmaceutical business process within the researcher’s client company. However, this research is not focus much on financial and administration department process which their activities can also effect supply chain process.

To conduct a study on an organization owned by foreigners presents some limitations beyond the control of the researcher.

- **Time limitation**  In gathering information, the scope of researching logistics supply chain mean all the process throughout the supply chain like procurement, inventory, warehousing, material handling, production planning, sales and distribution is involved in several unit or department, it’s time consuming in collection of all data from all units and departments that are worked in different areas. That why the researcher only focus on inventory control part of logistical supply chain. Inventory control is the most critical process for the supply chain that change of this can affect the efficiency of the whole process. For organization restructuring also needed more time to finish since the research company is a big and long history firm. Organization change could not take place within a short period of time.

- **Hard to prove for success of supply chain** The reason why the scope of this study is only focus on some variables that impact the whole supply chain. The research is compared the gap between pre-ODI and post-ODI for these variables but still not cover to the success of the whole supply chain after ODI because it hard to prove that the success or change in logistics supply chain causes
from implementing ODI. ODI’s just one tool that drives to change in the supply chain, there are also several factors that can cause the changes.

- **Distance limitation** Since some logistics supply chain especially manufacture part staff work in separates locations like in factory in another province, it’s hard to collect data at once in term of some information that relate to another person. Some staff from manufacture cannot join all the interview session and probably led to misunderstanding in the part that related to them.

- **Individual Difference** Some staff, especially top management comes from another country not Thailand, so they have the different idea about organization policy, local law and legal policy and organization culture which different from Thai staff.

- **Management bias** Top management has their own thinking style of management and cost-concerned, so they may have negative attitude toward the research.

- **Resistance to change** Generally, every human are not reluctant, actually fear about change, because change may effect the security of their work in term of change their routine operation, have to initiate the new idea that differ from the past and change the organization culture.

- **Researcher role bias** Because the researcher is officially consultant for the research’s company. It’s cause the researcher very difficult to draw the scope of the research. Sometimes the researcher predict the result of pre-OD and post-OD in advance because the researcher already know the current situation of the research’s company in detail and know what change is possible, what changes are not.
**Definition of terms**

**Brand manager**

In-group languages that use only in pharmaceutical business represent each marketing or sales. Each marketing unit is responsible for each principal of the product. In other word, each marketing unit has at least one brand under its responsibility.

**Change**

Upon this research, change mean planned change. Organizational development is directed at bringing about planned change to increase an organization’s effectiveness. Organization change as a change from current state, transition state and then reach to desired future state.

**Distribution center**

General term use in trading business mean company warehouse to store the trading goods, perform the invoicing process, pick goods and ship them to the end customer according to the transportation channel.

**Enterprise resource planning**

Enterprise resource planning software, or ERP, doesn't live up to its acronym. Forget about planning—it doesn't do much of that—and forget about resource, a throwaway term. But remember the enterprise part. This is ERP’s true ambition. It attempts to integrate all departments and functions across a company onto a single computer system that can serve all those different departments' particular needs.

**Goods manufacturer practices (GMP)**

The GMP Labeling System offers labels, signs and software that make it easier to comply with GMP regulations and ISO 9000 requirements - as well as demonstrating commitment to FDA compliance. GMP Labeling products help you identify components,
pilot batches, raw materials, in-process materials, and areas in your laboratory and in production. GMP Labeling System products are designed in distinctive shapes, sizes, colors and color-coded titles to prevent lost identities, mix-ups and errors.

High involvement plant intervention

An increasing number of EI projects have been aimed at creating high-involvement organizations. Typically applied to new industrial plants, this EI intervention attempt to create organizational conditions supporting high level of employee participation.

Human process intervention

This change program relate to interpersonal relation and group dynamics. These change programs are among the earliest in OD and represent attempts to improve people's working relationships with one another.

International standard organization (ISO)

The International Organization for Standardization (ISO) is a worldwide federation of national standards bodies from some 140 countries, one from each country.

ISO is a non-governmental organization established in 1947. The mission of ISO is to promote the development of standardization and related activities in the world with a view to facilitating the international exchange of goods and services, and to developing cooperation in the spheres of intellectual, scientific, technological and economic activity.

ISO's work results in international agreements which are published as International Standards.

Inventory control process

Inventory control is a mechanical procedure for implementing an inventory policy. The accountability aspect of control measure units on hand at a specific location and
tracks additional and deletions to the base quantity. The primary differentials are speed, accuracy and cost.

**Job role**

The scope of work for each member within the organization. Every member in the organization should possess at least one job role.

**Job description**

The formal written document within the organization describes the job list of each employee within the organization.

**Job analysis & Job design**

Job design creates jobs and work groups that generate high levels of employee fulfillment and productivity. This techno structural intervention can be part of a larger employee involvement application, or it can be an independent change program.

**Job enrichment**

Job enrichment involves designing jobs with high levels of skill variety, discretion, and knowledge of results.

**Logistic**

Logistics is concerned with getting products and services where they are needed when they are desired. Logistics involves the integration of information, transportation, inventory, warehousing, material handling, and packaging.

**Managerial function**

The key management function for manager in every level of the organization, which include planning, organizing, leading or motivating and controlling.
Norm represents the day-to-day interaction, protocol that all members must agree with, accept and follow in the organization.

**Organization**

A group of persons organized for a particular purpose. It’s also meaning a structure through which individuals cooperate systematically to conduct business.

**Organization culture & climate**

The concept of 'organization culture' has become popular since the early 1980s. There is no consensus about its definition but most authors will agree that it is something holistic, historically determined, related to the things anthropologists’ study, socially constructed, soft and difficult to change. It is something an organization has, but can also be seen as something an organization is. The culture that will focus in the study is only the inter-group collaboration norm.

**Organization structure**

One important concept for organization behavior, which focuses in, designs the structure of the organization. The four criteria that should be consider when designs the organization structure are degree of specialization, delegation of authority, departmentalization and span of control. The organization structure will be tall or flat is depend on the combination of the four factors. The major function that will be focus throughout this study is on organization departmentalization and delegation of work.

**Organization development**

Organization development is an evolving mixture of science and art. It is both a professional field of social action and an area of scientific inquiry. The study of OD addresses a board range of topics, including the effects of change, the methods of organizational change, and the factors influencing OD success. The interventions that
intend to propose in the study are cultural change, structural redesign, job redesign, ERP/SCM, management by objective, open-system planning and quality circle.

Organization issue

Issues in the organization that can be categorized in four interrelated issues facing organizations as follow,

Human process issue: These issues have to do with people in organizations and their interaction processes such as decision-making, leadership and group dynamic.

Technology and structure issue: Organization must decide how to divide labor into departments and then how to coordinate among them.

Human resource issue: These issues are concerned with attracting competent people to the organization, setting goals for them, appraising and rewarding their performance, and ensuring that they develop their careers and manage stress.

Strategic issue: Organization need to decide what product or services they will produce and what market they will compete in. These strategic issues are among the most critical facing organizations in today’s changing and highly competitive environment.

Organization development intervention

Organization development interventions are those actions intended to help the organizations improve their effectiveness, including quality of work life and productivity. Interventions derived from careful diagnosis and are meant to resolve specific problems and to improve particular area of organizational functioning identified in that diagnosis.

Organization transformation

Organization transformations can occur in response to or in anticipation of major changes in organization’s environment or technology. In addition, these changes are often associated with significant alterations in the firm’s business strategy, which may require
modification corporate culture as well as internal structures and processes to support the new direction.

**Open system planning**

Open system planning (OSP) helps an organization to systematically assess its task environment and to develop a strategic response to it. OSP treats organizations or departments as open systems that must interact with a suitable environment in order to survive and develop.

**Pharmaceutical supply chain**

One of business industry specific that mostly business is deal with pharmaceutical supply chain. The process start from procurement of raw material, inventory, and production process, warehousing and distribute the products to the market.

**Principal**

Another in-group language, which used only in pharmaceutical business represent the supplier or vendor that supply the goods for the organization. At the same time, these vendors are also customer because they hire the organization to promote and trade their goods.

**Quality circle**

Quality circle or employee involvement teams are one of the most popular approaches to employee involvement (EI). Originally, developed in Japan in the mid-1950s. Quality circle represents a participative approach to employee involvement in problem solving and productivity improvement.

**Risk management**
The one of modern management technique that use to dealing with uncertainty situation. Uncertainty can be both internal stress and external fast changing and competitive environment.

**Structural design**

Structural design interventions are concerned with how the organization’s work is divided into specific groups or departments and then coordinated to achieve overall effectiveness.

**Supply chain**

The structure of intra-company organizational units and extra company agent and dealers, wholesales and retail, through which a commodity, product, or services is markets.

**Supply chain management**

The basic notion of supply chain management is grounded on the belief that efficiency of the whole supply chain can be improved by sharing information and by joint planning. The supply chain management perspective shifts the channel arrangement from a loosely linked group of independent businesses to a coordinated effort focused on efficiency improvement and increased competitiveness.

**Total quality management**

Total quality management (TQM) is the most recent and perhaps the most comprehensive approach to employee involvement. It is a long-term effort that orients all of an organization’s activities around the concept of quality.
CHAPTER 2

REVIEW OF RELATED LITERATURE AND CONCEPTUAL FRAMEWORK

The purpose of this study is to explore the effects of organization development intervention (ODI e.g. organization transformation, structural design, job redesign, enterprise resource planning, supply chain management, human process intervention, empowerment, open system planning, quality circle and high employee involvement) in a logistics supply chain. The key topics are covered in this review of literature are: (1) Organization Development (OD) process; (2) Organization Development Intervention (ODI) activities such as organizational transformation, structural design, job redesign, enterprise resource planning, supply chain management, management by objective, open system planning, employee involvement (especially quality circle), organization culture, organization structure, job role, inventory management, managerial function, risk management and total quality management.

Organization Development (OD)

Organization Development is an evolving mixture of science and art. It is both a professional field of social action and an area of scientific inquiry. The study of OD addresses a broad range of topics, including the effects of change, the methods of organizational change, and the factors influencing OD success. In this study it is the process engaged in an action research which begins with diagnosis on the key variables,
design, development and implementation of a set of interventions to address the identified problems in the diagnosis and finally the evaluation phase where the same variables are assessed again to determine if significant change occur after the intervention in a logistic supply chain company. (Worley, 1993)

**Organization Development Intervention (ODI)**

Organization Development Interventions are those actions intended to help organizations improve their effectiveness, including quality of work life and productivity. Interventions derive from careful diagnosis and are meant to resolve specific problems and to improve particular area of organizational functioning identified in that diagnosis. ODI activities vary from standardized programs that have been developed to relatively unique programs to those developed and used in many organizations tailored to a specific organization or department.

The term intervention refers to a set of planned change activities intended to help an organization increase its effectiveness. Interventions that assist in improving productivity and the quality of work life have three key characteristics: 1) they are based on valid information about the organization’s functioning; 2) they provide organizational members with opportunities to make free and informed choices; and 3) they gain members’ internal commitment to these choices. (Worley, 1993, p.163)

The ODI that represents the major organizational change methods used in OD today by most of the leading organizations around the world as the tools for improve their organization process. Generally, ODI can be categorized as follow,

**Human process intervention:** This intervention focuses on people within the organizations and the process through which they accomplish organizational goals. These processes include communication, problem solving, group decision making and leadership. This type of intervention is deeply rooted in the history of OD. Human process intervention derived mainly from the disciplines of psychology and social psychology and the applied fields of group dynamics and human relations.
Technostructural intervention: This intervention focuses on the technology and structure of organizations. These change methods are receiving increasing attention in OD, especially in light of current concerns about productivity and organizational effectiveness. They include approaches to employee involvement, as well as methods for designing organizations, groups, and jobs. Technostructural interventions are rooted in the disciplines of engineering, sociology, and psychology and in the applied fields of sociotechnical system and organization design.

Human resource management intervention: This intervention focuses on personnel practices used to integrate people into organizations. These practices include career planning, rewards systems, goal setting, and appraisal. These change methods have traditionally been associated with the personnel function in organization. Human resource management intervention are rooted in the disciplines of economics and labor relations and in the applied personnel practices of wages and compensation, employee selection and placement, performance appraisal, and career development.

Strategic intervention: This intervention links the internal functioning of the organization to the larger environment and transform the organization to keep pace with changing conditions. These change programs are among the newest additions to OD. They are organization wide and bring about a fit between business strategy, structure, culture, and the larger environment. The intervention derives from the disciplines of strategic management, organization theory, open-systems theory, and cultural anthropology. (Burke, 1987, p. 107)

In this research the organization development intervention used included organization cultural change as one of the strategic interventions. This cultural change is used to change the organization culture from high individualism to high collectivism. Another intervention used in the research is a technostructural intervention like structural redesign that changes organization structure. This is to reduce the complexity, and redesign the delegation of authority and span of control. Job redesign is also used to reduce the vague job description and enrich the job in detail.

In organizational and human process the interventions used are intended to increase the effectiveness of management function addressing centralized planning and
decision-making process and defining what is the best leadership style that matches requirements of a pharmaceutical business. Open system planning is a planning that relates and copes with fast changing environment is used to deal with uncertainty situation in healthcare market. Other ODI like quality circle is applied to help the organization member understand more about their role in total quality management process and increase their involvement. (Worley, 1993)

Information technology (IT) is also classified as the intervention in this research. Information technology is as a tool to streamline the business. IT is intended to provide the real time information that increases the accuracy and up-to-date decision-making process of the research's company management. For the information technology intervention, the researcher applied enterprise resource planning and supplies chain management application software to implement in the research company. The main purpose is to streamline the inventory management process and derive real time information to update top management.

**Logistics supply chain**

Logistics involves the integration of information, transportation, inventory, warehousing, material handling, and packaging. All of these areas of work provide a variety of stimulating jobs. These jobs combine to make overall logistics management a challenging and rewarding career. Because of the strategic importance of logistical performance, an increasing number of successful logistics executives are being promoted to senior management. Logistics supply chain is the channel from procurement cycle, production cycle and sales cycle that integrate with the inventory control and information
flow. External party like material or service suppliers and customers are also included in
the process of logistics supply chain.

The excitement and newness of logistics stem from a combination of traditional
work areas into an integrated strategic initiative. The successful senior logistics executive
serves as a cross-functional orchestration of work both within and beyond his/her firm.
Within the firm, the challenge is to coordinate individual job expertise into an integrated
competency focused on servicing customers. In most situations the desired scope of such
coordination transcends the individual enterprise, reaching out to include customers as
well as material and service suppliers. In a strategic sense, the senior logistics officer
leads a boundary-spanning initiative to facilitate effective supply chain relationships. The
excitement of contemporary logistics is found in making the combined results of internal
and external integration one of the core competencies of an enterprise.

The term logistics is not specific to the business or public sector. The basic concepts of logistical management are applicable throughout private and public enterprise activities. Over the years, common titles used to describe all or parts of the material discussed have been business logistics, physical distribution, material logistics management, materials management, physical supply, logistics of distribution, marketing logistics, inbound logistics, and total distribution.

Logistics is the process of planning, implementing and controlling the efficient, effective flow and storage of goods, services and related information from the point of origin to the point of consumption for the purpose of conforming to customer requirements (Closs, 1996, p. 10)

The overall goal of logistics is to achieve a targeted level of customer service at the
lowest possible total cost. Logistic involves detailed and complex work. Logistics
managers are responsible for planning and administrating this work.

Logistics exists to satisfy customer requirements by facilitating relevant manufacturing and marketing operations. At a strategic level, logistics manager seek to achieve previously agreed upon quality of customer services through state-of-the-art operating competency. The
challenge is to balance service expectation and cost expenditures in a manner that achieves business objectives. (Closs, 1996, p. 11)

There are two parts that very important for logistics supply chain, the first one is inventory flow, the operational management of logistics is concerned with movement and storage of materials and finished products. Logistical operations start with the initial shipment of a material or component part from a supplier and are finalized when a manufactured or processes product is delivered to a customer.

Another important part is the information flow; information flow identified specific location within a logistical system that has requirements. Information also integrates the three operating area. The primary objective of developing and specifying requirements is to plan and execute integrated logistics operations. The primary objective of information sharing is to reconcile the size of order and the availability of inventory. Logistical information involves two major types of flows: coordination flow and operational flows. The overall relationship between the two logistical information flows is illustrated in Figure 2-1.
Organizations do not implement internal logistics integration in a vacuum. It is important to recognize obstacles, or barriers, that often serve to inhibit internal process integration. Integration barriers originate in traditional practices related to organization structure, measurement systems, inventory control, information technology and uncertainty situation.

Organization structure – the traditional organization structure for conducting business prevents any cross-functional process from being implemented. Since the goal of integration is cooperation among functional areas, the formal organizational structure can hinder success. Popular term to describe traditional functions is the sandbox or silo mentality. Successful integration of a process such as logistics requires manager to look beyond their organizational structure and facilitate cross-functional coordination.

Measurement system – traditional measurement system have also made cross-functional coordination difficult. Generally, most measurement system mirrors the organization structure. To successfully facilitate integration of logistics functions, a new scorecard must be developed.

Inventory control – It is a fact that inventory can help a specific function achieve its mission. The traditional approach to inventory ownership is to maintain adequate supply to gain comfort and protect against demand and operational uncertainty. While such practices create benefits, they have a related cost. The critical issue is the cost-benefit relationship and the risks related to incorrectly located or obsolete inventory.

Information technology – Information technology is the key resource to achieve integration. Information system applications tend to be designed along organization lines. Many databases are limited to specific function and are not easily accessed on a cross
functional basis. The need to share information has resulted in the development of data warehouses that exist for the sole purpose of sharing information between systems.

Uncertainty performance cycle – A major objective of logistical management is to reduce performance cycle uncertainty. The dilemma is that the structure of the performance cycle itself, operating conditions, and the quality of logistical operations combine randomly to create variance. While consistency is the primary goal; faster order cycles reduce inventory risk and improve turn performance.

Cultural change

The number of cultural change interventions has grown accordingly. Corporate culture is also the focus of growing research and OD application. The concept of corporate culture involves the generally unexamined values and norms that guide employee behavior and that has an often-powerful impact upon organizational effectiveness. Interventions aimed at helping organization to diagnose their corporate cultures and to change them if necessary are still relatively new to OD and are generally carried out by practitioners and consulting firms with special skills, knowledge, and experience in organization strategy, design, and culture.

Before changing the corporate culture, the researchers have to diagnose the corporate culture first. Cultural change interventions generally start by diagnosing the organization’s existing culture to assess its fit with current or proposed business strategy. Changes in strategy generally require supporting changes in organizational structures and systems. A lack of fit between culture and the necessary organizational changes can result in the failure to get them implemented effectively. (Tushman, 1986)

Diagnosing corporate culture requires uncovering and understanding people’s basis assumptions, value, norms, and artifacts about organizational life. Collecting such information poses at least three difficult problems. First, culture reflect shared assumptions about what is important,
how thing are done, and how people should behave in organizations. People generally take cultural assumption for granted and rarely speak of them directly. Rather the company culture is implied in concrete behavior examples, such as daily, routines, stories, rituals, and language. This mean that considerable time and effort must be spent observing, sifting through, and asking people about these cultural outcroppings in order to understand their significance for organization members. Second, some values and beliefs that people espouse have little to do with the ones they really hold and follow. People are reluctant to admit this discrepancy, yet somehow the real assumptions underlying idealized portrayals of culture must be discovered. Third, large, diverse organizations are likely to have several subcultures, including counterculture going against the grain of the wider corporate culture. Assumptions may not be widely shared and may differ across groups in the organization. This means that focusing on limited parts of the organization or on a few select individuals may provide a distorted view of the organization culture and subcultures. All relevant groups in the organization must be discovered and their cultural assumptions sampled. Only then can the extent to which assumptions are widely shared be judged. (Worley, 1993: 531)

The following steps describe this managerial-behavior approach to diagnosing corporate culture and to using that data to assess the cultural risks of strategic changes.

1. Identify the existing culture. This step includes describing an organization’s culture in term of important managerial behaviors – how managerial tasks are typically performed and how organizational relationships are usually managed.

2. List organizational changes needed to implement strategy. This step is concerned with changes in organization structure, managerial systems and people needed to implement a new strategy.

3. Assess cultural risks. This final step involves assessing the degree to which the needed changes fit with the organization’s culture. Modifications that are incompatible with culture are likely to be resisted.

Although knowledge about changing the corporate culture is in a formative stage, the following practical advice can serve as guidelines for cultural change;
1. Clear strategic vision. Effective cultural change should start from a clear vision of the firm's new strategy and of the shared values and behaviors needed to make it work. This vision provides the purpose and direction for cultural change. It serves as a yardstick for comparing the firm's existing culture and for deciding whether proposed change are consistent with new values.

2. Top management commitment. Cultural change must be managed from the top of the organization. Senior managers and administrations need to be strongly committed to the new values and need to create constant pressures for change.

3. Symbolic leadership. Senior executives must communicate the new culture through their own actions. Their behavior needs to symbolize the kinds of values and behaviors being sought.

4. Supporting organizational changes. Cultural change must be accompanied by supporting modifications in organizational structure, human resource systems, information and control systems and managerial style. These organizational features can help to orient people behaviors to the new culture.

5. Selection and socialization of newcomers and termination of deviants. One of the most effective methods for changing corporate culture is to change organizational membership. People can be selected and terminated in term of their fit with the new culture.

6. Ethical and legal sensitivity. Cultural change can raise significant tensions between organization and individual interests resulting in ethical and legal problems for practitioners.
As mention above, cultural change is based on the related area of organizational change, which includes organizational structure, managerial function, and information flow within the organization.

The following figure illustrates the elements affected that need to be considered before changing culture,

![Environmental forces and organizational system](Image)

**Figure 2-2 : Environmental forces and organizational system (Worley, 1993 : 539)**

**Structural redesign**

There are several techniques for design a new organizational structure or as generally called organization restructuring.

Organization design as a decision process that attempts to align, overtime, the (1) goals and strategy of the organization, (2) the patterns of division of labor and inter-unit coordination, and (3) the people who will do the work. Thus, explicit decisions must be made about three different features of an organization: strategy, organizing mode, and mechanisms for integrating people into the organization. (Worley, 1993 : 274)

Related to the definition, following figure is illustrated this definition,
Organization design is the search for coherence or a fit.

Figure 2-3: Concept of organization design (Worley, 1993 : 275)

The following figure shows what the factors that should be taken under consideration during organization structure redesign,

Figure 2-4: Contingencies influencing structural design (Worley, 1993 : 277)

The following section describes the way to design the organization structure in detail and also proposes the new concept of structural redesign.
**The simple organization structure** - A structure characterized by a low degree of
departmentalization, wide spans of control, authority centralized in a single person, and
little formalization.

The simple structure is said to be characterized most by what it is
not rather than what it is. The simple structure is not elaborated. It has a low
degree of departmentalization, wide spans of control, authority centralized
in a single person, and little formalization. The simple structure is a “flat”
organization; it usually has only two or three vertical levels, a loose body of
employees, and one individual in whom the decision-making authority is
centralized. The simple structure is most widely practiced in small
businesses in which the manager and the owner are one and the same.
(Robbin, 1998 : 411)

The strength of the simple structure lies in its simplicity. It’s fast, flexible,
inexpensive to maintain, and accountability is clear. One major weakness is that it’s
difficult to maintain in anything other than small organizations. It becomes increasingly
inadequate as an organization grows because its low formalization and high centralization
tend to create information overload at the top. As size increases, decision-making
typically becomes slower and can eventually come to a standstill as the single executive
tries to continue making all the decisions.

**The bureaucracy organization structure**: A structure with highly routine-operating
tasks achieved through specialization, much formalized rules and regulations, tasks that
are grouped into functional departments, centralized authority, narrow spans of control,
and decision-making that follows the chain of command.

The bureaucracy is characterized by highly routine operating tasks
achieved through specialization, much formalized rules and regulations,
tasks that are grouped into functional departments, centralized authority,
narrow spans of control, and decision making that follows the chain of
command. (Robbin, 1998 : 415)

The primary strength of the bureaucracy lies in its ability to perform standardized
activities in a highly efficient manner. Putting like specialties together in functional
departments results in economies of scale, minimum duplication of personnel and equipment, and employees who have the opportunity to talk "the same language" among their peers. Furthermore, bureaucracies can get by nicely with less talented—and, hence, less costly—middle- and lower-level managers. The pervasiveness of rules and regulations substitutes for managerial discretion. For bureaucratic organization, every employee have to strictly follow the rule which written in company policy. Standardized operations, coupled with high formalization, allow decision making to be centralized. There is little need, therefore, for innovative and experienced decision makers below the level of senior executives. (Robbin: 1998)

The only major weakness of a bureaucracy is something we’ve all experienced at one time or another when having to deal with people who work in these organizations: obsessive concern with following the rules. When cases arise that don’t precisely fit the rules, there is no room for modification. The bureaucracy is efficient only as long as employees confront problems that they have previously encountered and for which programmed decision rules have already been established. (Jon: 1991)

There are other sub structure designs under this bureaucratic structure, which categorized the organization structure according to how the organizations are departmentalized.

The functional organization: this is perhaps the most widely used organizational structure. This is the standard pyramid, with senior management at the top, middle and lower manager spread out directly below, and worker at the bottom. The organization is usually subdivided into different functional units, such as engineering, research, manufacturing, accounting and sales.
The self-contained unit organization: The self-contained unit structure represents a fundamentally different way of organizing. Also known as a product or divisional structure, it grouped organizational activities on the basis of products, services, customers, or geography.

The matrix organization structure - A structure that creates dual lines of authority; combines functional and product departmentalization.

Another popular organizational design option is the matrix structure. You’ll find it being used in advertising agencies, aerospace firms, research and development laboratories, construction companies, hospitals, government agencies, universities, management consulting firms, and entertainment companies. Essentially, the matrix combines two forms of departmentalization: functional and product. (Robbin, 1998, p. 423)

The strength of functional departmentalization lies in putting like specialists together, which minimizes the number necessary, while it allows the pooling and sharing of specialized resources across products. Its major disadvantage is the difficulty of coordinating the tasks of diverse functional specialists so that their activities are completed on time and within budget. Product departmentalization, on the other hand, has exactly the opposite benefits and disadvantages. It facilitates coordination among specialties to achieve on-time completion and meet budget targets. Furthermore, it provides clear responsibility for all activities related to a product, but with duplication of activities and costs. The matrix attempts to gain the strengths of each, while avoiding their weaknesses. (Bell, 1978)

The major disadvantages of the matrix lie in the confusion it creates, its propensity to foster power struggles, and the stress it places on individuals.

There is another organization structure designs that become the new dimension for designing the organization structure are as follow,
**The team structure:** The use of teams as the central device to coordinate work activities. The primary characteristics of the team structure are that it breaks down departmental barriers and decentralizes decision making to the level of the work team. Team structures also require employees to be generalists as well as specialists' team structures the use of teams as the central device to coordinate.

**The virtual organization:** A small, core organization that outsource major business functions. In structural terms, the virtual organization is highly centralized, with little or no departmentalization. The major advantage to the virtual organization is its flexibility. The virtual organization stands in sharp contrast to the typical bureaucracy that has many vertical levels of management and where control is sought through ownership. In such organizations, research and development are done in-house, production occurs in company-owned plants, and sales and marketing are performed by the company's own employees. To support all this, management has to employ extra personnel including accountants, human resource specialists, and lawyers. The virtual organization, however, outsource many of these functions and concentrates on what it does best. (Robbin, 1998, p. 444)

**The boundaryless organization:** An organization that seeks to eliminate the chain of command, have limitless spans of control, and replace departments with empowered teams.

The one common technological thread that makes the boundaryless organization possible is a networked computer. They allow people to communicate across intraorganizational and interorganizational boundaries. Electronic mail, for instance, enables hundreds of employees to share information simultaneously and allows rank-and-file workers to communicate directly with senior executives. (Robbin, 1998, p. 445)

**Job redesign**

Work design has been extensively researched and applied in organizations. Recently organizations have tended to combine work design with supporting changes in goal setting, reward systems, work environment, and other performance management...
practices. These organizational factors can help to structure and reinforce the kinds of work behaviors associated with specific work designs.

Traditional jobs involve relatively routine and repetitive forms of work where little interaction among people is needed to produce a service or product. Traditional work groups are composed of members performing routine yet interrelated tasks. Rigid workflows, supervisors, and schedules typically control member interactions. There are several approaches that related to job design (Feder, 1999)

The engineering approach focuses on efficiency and simplification and result in traditional job and work group designs

The second approach on work design rests on motivational theories and attempts to enrich the work experience. Job enrichment involves designing jobs with high levels of skill variety, discretion, and knowledge of results. A well research model focusing on job attributes has helped to clear up methodological problem with this important intervention. However, there are several studies that related to this approach like task attribute theory, job characteristic model, social information model, and jobs enrichment.

- Task characteristic attribute theory - Seek to identify task characteristics of jobs, how these characteristics are combined to form different jobs, and their relationship to employee motivation, satisfaction, and performance.

There are at least seven different task characteristics theories. Fortunately, there is a significant amount of overlap between them. For instance, Herzberg’s motivation-hygiene theory and the research on the achievement need are essentially task characteristics theories. You’ll remember that Herzberg argued that jobs that provided opportunities for achievement, recognition, responsibility, and the like would increase employee satisfaction. Similarly, McClelland demonstrated that high achievers performed best in jobs that offered personal responsibility, feedback, and moderate risks. (Feder, 1999, p. 112)
- Job characteristics model - Identifies five job characteristics and their relationship to personal and work outcomes. This model is quite popular use in many companies around the world.

Turner and Lawrence's requisite task attributes theory laid the foundation for what is today the dominant framework for defining task characteristics and understanding their relationship to employee motivation, performance, and satisfaction. That is Hackman and Oldham's job characteristics model (JCM). (Ivancevich, 1999: 231)

According to the JCM, any job can be described in terms of five core job dimensions, defined as follows:

1. **Skill variety**: The degree to which the job requires a variety of different activities so the worker can use a number of different skills and talent.
2. **Task identity**: The degree to which the job requires completion of a whole and identifiable piece of work.
3. **Task significance**: The degree to which the job has a substantial impact on the lives or work of other people.
4. **Autonomy**: The degree to which the job provides substantial freedom, independence, and discretion to the individual in scheduling the work and in determining the procedures to be used in carrying it out.
5. **Feedback**: The degree to which carrying out the work activities required by the job results in the individual obtaining direct and clear information about the effectiveness of his or her performance.

- Social information process model - Employees adopt attitudes and behaviors in response to the social cues provided by others with whom they have contacted.

The fact that people respond to their jobs as they perceive them rather than to the objective jobs themselves is the central thesis in our third task characteristics theory. It's called the social information processing (SIP) model.

The SIP model argues that employees adopt attitudes and behaviors in response to the social cues provided by others with whom they have contact. These others can be co-workers, supervisors, friends, family members, or customers.

A number of studies generally confirm the validity of the SIP model. For instance, it has been shown that employee motivation and satisfaction can be manipulated by such subtle actions as a co-worker or boss commenting on the existence or absence of job features like difficulty, challenge, and autonomy. So managers should give as much (or more) attention to employees' perceptions of their jobs as to the actual characteristics of those jobs. They might spend more time telling employees...
how interesting and important their jobs are. And managers should also not be surprised that newly hired employees and people transferred or promoted to a new position are more likely to be receptive to social information than are those with greater seniority. (Koontz, 1993, p. 331)

The third and most recent approach to work design derives from sociotechnical systems methods. This perspective seeks to optimize both the social and the technical aspects of work systems. It has led to the development of a popular form of work design called "self-regulating work groups". They are composed of multi-skilled members performing interrelated tasks. Members are given the knowledge, information and power necessary to control their own task behaviors with relatively little external control.

Let’s focus to the work redesign or reengineering for the research company. The term reengineering comes from the historical process of taking apart an electronics product and designing a better version. Michael Hammer coined the term for organizations. When he found companies using computers simply to automate outdated processes, rather than finding fundamentally better ways of doing things, he realized the same principles could be applied to business. So, as applied to organizations, reengineering means management should start with a clean sheet of paper—rethinking and redesigning those processes by which the organization creates value and does work, ridding itself of operations that have become antiquated in the computer age.

There are three key elements of reengineering are identifying an organization’s distinctive competencies, assessing core processes, and reorganizing horizontally by process. An organization’s distinctive competencies define what it is that the organization is more superior at delivering than its competition. Management also needs to assess the core processes that clearly add value to the organization’s distinctive competencies. These are the processes that transform materials, capital, information, and labor into products and services that the customer values. When the organization is viewed as a series of processes, ranging from strategic planning to after-sales customer support, management can determine to what degree each adds value. Not surprisingly, this process value analysis typically uncovers a whole lot of activities that add little or nothing of value and whose only justification is "we’ve always done it this
Reengineering requires management to reorganize around horizontal processes. This means cross-functional and self-managed teams. It means focusing on processes rather than functions. So, for instance, the vice president/marketing might become the “process owner of finding and keeping customers.” And it also means cutting out levels of middle management. (Robbin, 1998, p. 344)

Job reengineering sometimes quite confuse with TQM but actually it’s different but only share some common characteristics. They both, for instance, emphasize processes and satisfying the customer. After that, they diverge radically. This is evident in their goals and the means they use for achieving their goals.

TQM seeks incremental improvements, while reengineering looks for quantum leaps in performance. That is, the former is essentially about improving something that is basically okay; the latter is about taking something that is irrelevant, throwing it out, and starting over. And the means the two approaches use are totally different. TQM relies on bottom-up, participative decision-making in both the planning of a TQM program and its execution. Top management, on the other hand, initially drives reengineering. When reengineering is complete, the workplace is largely self-managed. But getting there is a very autocratic, non-democratic process. Reengineering supporters argue that it has to be this way because the level of change that the process demands is highly threatening to people and they aren’t likely to accept it voluntarily. When top management commits to reengineering, employees have no choice. (Besterfield, 1999)

Theoretically, there are four types of work redesign that we can apply to use for reengineering the current job description.

- **Job rotation** - If employees suffer from over-reutilization of their work, one alternative is to use job rotation (or what many now call *cross-training*). When an activity is no longer challenging, the employee is rotated to another job, at the same level, that has similar skill requirements.
The strengths of job rotation are that it reduces boredom and increases motivation through diversifying the employee’s activities. Of course, it can also have indirect benefits for the organization since employees with a wider range of skills give management more flexibility in scheduling work, adapting to changes, and filling vacancies. On the other hand, job rotation is not without its drawbacks. Training costs are increased, and moving a worker into a new position just when his or her efficiency at the prior job was creating organizational economies reduces productivity. Job rotation also creates disruptions. Members of the work group have to adjust to the new employee. The supervisor may also have to spend more time answering questions and monitoring the work of the recently rotated employee. Finally, job rotation can demotivate intelligent and ambitious trainees who seek specific responsibilities in their chosen specialty.

- Job enlargement - the idea of expanding jobs horizontally, or what we call job enlargement, grew in popularity. Increasing the number and variety of tasks that an individual performed resulted in jobs with more diversity. Instead of only sorting the incoming mail by department, for instance, a mail sorter’s job could be enlarged to include physically delivering the mail to the various departments or running outgoing letters through the postage meter.

But however job enlargement has many drawbacks. So, while job enlargement attacked the lack of diversity in over-specialized jobs, it did little to instill challenge or meaningfulness to a worker’s activities. Job enrichment was introduced to deal with the shortcomings of enlargement.
- Job enrichment - refers to the vertical expansion of jobs. It increases the degree to which the worker controls the planning, execution, and evaluation of his or her work. An enriched job organizes tasks so as to allow the worker to do a complete activity, increases the employee's freedom and independence, increases responsibility, and provides feedback, so an individual will be able to assess and correct his or her own performance.

- Team based work redesign - Team based work design almost based on the concept of teamwork like task group or quality circle. It's quite a new methodology for job redesign.

Following is a concept of individual work redesign,

We know a lot more about individual-based work design than we do about design at the group level, mostly because the wide popularity of teams — specifically assigning tasks to a group of individuals instead of to a single person—is a relatively recent phenomenon. That said, the best work in this area offers two sets of suggestions.

First, the JCM recommendations seem to be as valid at the group level as they are at the individual level. Managers should expect a group to perform at a high level when (1) the group task requires members to use a variety of relatively high-level skills; (2) the group task is a whole and meaningful piece of work, with a visible outcome; (3) the outcomes of the group's work on the task have significant consequences for other people; (4) the task provides group members with substantial autonomy for deciding how they do the work; and (5) work on the task generates regular, trustworthy feedback about how well the group is performing.

Second, group composition is critical to the success of the work group. Managers should try to ensure that the following four conditions are met: (1) Individual members have the necessary task-relevant expertise to do their work; (2) the group is large enough to perform the work; (3) members possess interpersonal as well as task skills; and (4) membership is moderately diverse in terms of talents and perspectives. (Robbin, 1998, p. 380)

**Enterprise resource planning (ERP)**

ERP systems serve a critical function by integrating separate business functions into single application architecture. However, these systems have three significant
limitations. First, managers can't generate custom reports or queries without help from a programmer. Second, ERP systems are focused on providing current status, such as open orders, while managers often need to look past the current status to find trends and patterns that aid decision-making. Third, ERP application data often isn't integrated with other enterprise systems and doesn't include external intelligence such as A.C. Nielson or Dun & Bradstreet databases.

An ERP system should be sufficiently versatile to support different manufacturing environments like make-to-stock, assemble-to-order and engineer-to-order. The customer order decoupling point (CODP) should be flexible enough to allow the co-existence of these manufacturing environments within the same system.

The system should be complete enough to support both Discrete as well as Process manufacturing scenarios. The efficiency of an enterprise depends on the quick flow of information across the complete supply chain i.e. from the customer to manufacturers to supplier. This places demands on the ERP system to have rich functionality across all areas like sales, accounts receivable, engineering, inventory management, production, purchase, accounts payable, quality management, production, distribution planning and external transportation. EDI (Electronic Data Interchange) is an important tool in speeding up communications with trading partners. (www.itpapers.com)

In the past decade the business environment has changed dramatically. The world has become a small and very dynamic marketplace. Organizations today confront new markets, new competition and increasing customer expectations. This has put a tremendous demand on manufacturers to;

- Lower total costs in the complete supply chain
• Shorten throughput times
• Reduce stock to a minimum
• Enlarge product assortment
• Improve Product quality
• Provide more reliable delivery dates and higher service to the customer
• Efficiently coordinate global demand, supply and production.

Thus today's organizations have to constantly re-engineer their business practices and procedures to be more and more responsive to customers and competition. In the 1990's Information technology and Business Process re-engineering, used in conjunction with each other, what have emerged as important tools, which give organizations the leading edge.

More and more companies are becoming global and focusing on downsizing and decentralizing their business. ABB and Northern Telecom are examples of companies which have business spread around the globe. For these companies to manage their business efficiently, ERP systems need to have extensive multi-site management capabilities. The complete financial accounting and management accounting requirements of the organization should be addressed. It is necessary to have centralized or decentralized accounting functions with complete flexibility to consolidate corporate information.

For companies undertaking large scale and complex ERP projects, tools should be available for cost-effective project management, project planning and project control. After-sales service should be streamlined and managed efficiently. A strong EIS (Enterprise Information System) with extensive drill down capabilities should be available for the top management to get a birds eye view of the health of their organization and help them to analyze performance in key areas.

Evaluation Criteria Some important points to be kept in mind while evaluating ERP software include:

• Functional fit with the Company's business processes
• Degree of integration between the various components of the ERP system
• Flexibility and scalability
• Complexity; user friendliness
• Quick implementation; shortened ROI period
• Ability to support multi-site planning and control
• Technology; client/server capabilities, database independence, security
• Availability of regular upgrades
• Amount of customization required
• Local support infrastructure
• Availability of reference sites
• Total costs, including cost of license, training, implementation, maintenance, customization and hardware requirements. (Closs, 1996: 308)

In the future, the success of an ERP solution depends on how quick the benefits can be reaped from it. This necessitates rapid implementations, which lead to shortened ROI periods. The Internet represents the next major technology enabler, which allows rapid supply chain management between multiple operations and trading partners. Most ERP systems are enhancing their products to become "Internet Enabled" so that customers worldwide can have direct to the supplier's ERP system. ERP systems are building in the Workflow Management functionally which provides a mechanism to manage and control the flow of work by monitoring logistic aspects like workload, capacity, throughout times, work queue lengths and processing times.

Supply chain management

Supply chain excellence can decrease inventory and cycle times while significantly increasing on-time deliveries and inventory turns. Taken together, these
results can provide companies with greater profits, improved customer service and that ever-elusive competitive advantage. But it takes the right vision, the right strategy and above all, the right software tools for theory to become reality. Not surprisingly, the supply chain strategies that have been implemented and their results have been as diverse as the electronics industry itself. To help electronics companies assess the best potential supply chain strategies and develop a strategic vision for the future, this paper provides an overview of the electronics market and supply chain, as well as the challenges facing companies in the industry today.

The goal of supply chain management is to improve the coordination and flow of information, materials and financials across functional and enterprise boundaries in a way that benefits all participants involved. Although this approach is contrary to the traditional view of optimizing within functional and corporate silos at the expense of the greater supply chain, many companies are embracing this new model. As the electronics industry continues to abandon the traditional vertically integrated structure in search of greater efficiencies, flexibility and responsiveness, a variety of multi-stage supply chain configurations have evolved. Figure 2-5 illustrates the multiple links and interactions between participants across the electronics supply chain. (Closs, 1996, p. 104)

![Diagram of Supply Chain Management Information Sharing](image)

Figure 2-5: Supply chain management information sharing (Closs, 1996: 105)

As many suppliers, manufacturers and distributors in the electronics industry embrace supply chain management to improve bottom line performance and provide a
competitive advantage, several winning strategies have emerged. These range from structural changes to the physical supply chain to entirely new channel strategies and re-engineered business processes. Many take advantage of advances in visibility and decision support offered by next-generation supply chain management systems.

The following are seven winning strategies and the next generation solutions that support them:

1. **Engage in Collaborative Supply Chain Planning**

Collaborative supply chain planning involves improving the coordination and information sharing for all activities, from design to delivery, across functions within an enterprise and across enterprise boundaries. As companies engage in collaborative planning activities, the results are decreased lead times, lower inventory levels and improved responsiveness. In addition to coordinating activities across the entire product life cycle, collaborative planning involves a comprehensive solution including changes made in alliance strategy, business process, performance measures and technology.

2. **Outsource Supply Chain Activities**

One of the most significant strategies embraced by the electronics industry is the outsourcing of manufacturing and logistics. As described on the electronics manufacturing supply chain, “Outsourcing is the electronics manufacturing corporate fitness program.” The motivation for outsourcing is driven by several factors such as increased speed, flexibility, agility and focus.

3. **Evolve From MTS to BTO**

Gone are the days where a fairly predictable environment supported the viability of a make-to-stock (MTS) business model. Mass customization, shrinking product life cycles, rapidly decreasing prices, and high inventory costs have forced companies in the
electronics industry to re-engineer their business models. The fundamental challenge is how to postpone the production of finished goods until an actual order is received. This approach helps to minimize inventory and related obsolescence costs while at the same time providing acceptable product lead times and customer service. Where appropriate, electronics companies are shifting their production and inventory strategy from make-to-stock (MTS) to build-to-order (BTO).

4. Capture and Manage Demand

In today’s electronics industry, product life cycle compression has made new product introductions the norm. This trend has led to an increasing emphasis on capturing demand from sales, product management and customers, along with product life cycle assumptions. This is in contrast to using demand history as the primary driver for creating viable demand projections. In addition, feedback regarding commitments against demand plans (constrained forecasts) provides the basis for collaboration among customers and suppliers, as well as internally through the Sales and Operations Planning (S&OP) process. These requirements present several challenges including ensuring distributed access for sales and customers to the application and integrating the demand plan with the “back-office” supply plan to provide real-time accurate commitments for collaboration.

5. Optimize the Extended Supply Chain

Managing multiple enterprises, plants, multi-staged hierarchies and hubs has become a reality for many companies in the electronics industry. Compared to a single-plant environment, multi-plant environments present significant challenges. For example, sourcing decisions for products produced in multiple locations should take into consideration material availability, cost, transportation, capacity and other variables. Additionally, multi-stage environments – where plants that produce components feed
assembly plants — require tight integration between plans and schedules. As companies have grown from single-plant environments, many legacy-planning systems cannot deal with the complexities of multi-plant environments.

6. Advanced Material Allocation

Several factors contribute to the allocation challenge in the electronics industry: material shortages, key components shared across multiple end-items, version control, and varying priorities for products and customers, to name a few. Establishing rules to determine allocation priorities can help, but they can impact several outcomes including profitability, service levels and handling of high-priority customers.

Open system planning

Open-system planning (OSP) helps an organization to systematically assess its task environment and to develop a strategic response to it. OSP treats organizations or departments as open systems that must interact with a suitable environment in order to survive and develop. It helps organization member to develop a strategic mission for relating to the environment and influencing it in favorable directions. The process of applying OSP begins with a diagnosis of the existing environment and how the organization relates to it. It proceeds to develop possible future environments and action plans to bring about the desired future environment.

Open system planning is based on four assumptions about how organizations relate to their environment. These include the following,

Organization members’ perceptions play a major role in environmental relations. Members’ perception determines which parts of the environment are attended to or ignored, as well as what value is placed on those parts. Such perception provides the basis for planning and implementing specific actions in relation to the environment.
Organization members must share a common view of the environment to permit coordinated action toward it. Without a shared view of the environment, organization would have trouble relating to it. Conflict would arise about what parts of the environment are important and about what value should be placed on different parts. Such perception disagreements make planning and planning a coherent strategy.

Organization members' perceptions must accurately reflect the condition of the environment if organizational responses are to be effective. Members can misinterpret environmental information, ignore important forces, or attend to negligible events. Such misperceptions can render organizational responses to the environment inappropriate.

Organization cannot only adapt to their environment but also proactively create it. Organization and environment relation are typically discussed in term of organization adapting to environmental forces. A more proactive alternative is for organizations to plan for a desired environment and then to take action against the existing environment to move it in the desired direction. This active stance goes beyond adaptation because the organization attempts to create a favorable environment, rather than simply reacting to external forces. (Bell, 1978)

Open system planning can help organization members to assess their environment and plan a strategy for relating to it. After OSP, they may value differently the complexity of their environment and may generate a more varied range of response strategies. OSP is typically carried out by the top management of an entire organization or by the management and key employees of a department. This group initially meets offsite for a two to three day period and may have several follow up meetings of shorter duration.

OSP starts from the perspective of a particular organization or department. This point of reference identifies the relevant environment. It serves as the focus of the planning process, which consists of the following steps:

1. Assess the external environment in term of domains and the expectations those domains have for the organization's behavior. This step maps the current environment facing the organization. First, the different parts or domains of the environment are identified. Listing all
external groups directly interacting with the organization, such as customers, suppliers, or government agencies usually does this.

2. **Assess how the organization responds to the environmental expectations.** This step assesses the organization’s responses to the environmental expectations identified in step 1.

3. **Identify the core mission of the organization.** This step helps to identify the underlying purpose or core mission of the organization, as derived from how it responds to external demands. Attention is directed at discovering the mission in term of the organization’s behavior, rather than simply accepting an official statement of the organization’s purpose.

4. **Create a realistic future scenario of environmental expectations and organization responses.** This steps ask members to project the organization and its environment into the near future, assuming no real change in the organization.

5. **Create an ideal future scenario of environmental expectations and organization responses.** Here, members are asked to create alternative, desirable futures. This involves going back over step 1, 2 and 3 and asking what members would ideally like to see happen in the near future in both the environment and the organization. People are encouraged to fantasize about desired futures without worrying about possible constraints.

6. **Compare the present with the ideal future, and prepare an action plan for reducing the discrepancy.** This last step identifies specific actions that will move both the environment and the organization toward the desired future. Planning for appropriate interventions typically occurs in three time frames: tomorrow, six months from now, and two years from now. Members also decide on a follow-up schedule for sharing the flow of actions and updating the planning process. (Worley, 1993: 505)

**High employee involvement**

Employee involvement is concerned with moving decision making downward in the organization, closer to those performing work. A comprehensive definition of EI involves at least four key elements that promote worker involvement: performance outcomes, customer service, and employee selection. The amount of power afforded employees can vary enormously, from simply asking them for input into decisions that managers subsequently make, to managers and workers jointly making decisions, to employees making decisions themselves.
Employee involvement can be understood against its background in the quality-of-work-life (QWL) movement started in the late 1950s. The phrase quality of work life was used to stress the prevailing poor quality of life at the workplace. Over the past thirty years, both the term “QWL” and the meaning attributed to it have undergone considerable change and development, giving rise to the current emphasis on Employee Involvement (EI). (Worley, 1993, p.305)

Employee involvement is one approach to improving quality and productivity. Its use is credited for contributing to the success enjoyed by the Japanese in the world marketplace. Employee involvement is not a replacement for management nor is it the final word in quality improvement. It is a means to better meet the organization’s goals for quality and productivity at all levels of an organization. (Sacre, 1999:, p.73)

Four elements – power, information, knowledge and skill, and rewards – contribute to EI success. They determine how much participation in decision-making is possible in organizations. The farther that all four elements are moved downward throughout the organization, the greater the employee involvement. The two EI methods that will describe below will be proposed as tools for better TQM process.

Quality circle

Quality circles, or generally called “employee involvement teams” as they are often called in the United States, are one of the most popular approaches to Employee Involvement. Originally developed in Japan in the mid-1950s, quality circles represent a participative approach to employee involvement in problem solving and productivity improvement. They consist of small groups of employees who meet voluntarily to identify and solve productivity problems. The group method of problem solving and the participative management philosophy associated with it are natural outgrowths of Japanese managerial practices. (Honeycutt, 1989)

The Japanese emphasize decentralized decision-making and use the small group as the organization unit to promote collective decision-making and responsibility. Various estimates put the total circle membership at as many as 10 million Japanese workers.
The popularity of quality circles can be attributed in part to the widespread drive to emulate Japanese management practices and to achieve the quality improvements and cost savings associated with those methods. (Ross, 1994, p. 143)

Quality circles require a managerial philosophy and culture that promotes sharing power, information, knowledge, and rewards. They require moving some decision making down to employees. Management still retains considerable some control, however, because quality circles simply recommend solution to management. In addition, good recommendations often require training in-group problem solving techniques and information with which to solve problems. Finally, many companies offer rewards to circles that recommend solutions that ultimately result in cost savings or productivity increases.

Although how quality circles are applied in organizations varied widely, a typical program structure is illustrated in Figure 2-6, Circle program generally consist of several circles, each having three to fifteen members. Membership is voluntary, and members of a circle share a common job or work area. Circle meets once each week for about one hour on company time. Members are trained in different problem identification and analysis techniques.

Each circle has a leader, who is typically the supervisor of the work area represented by circle membership. The leader train circle members and guide the weekly meeting. Facilitators can be a key part of quality circle program. They coordinate the activities of several circles and mat attends the meeting, especially during the early stages of circles development. Facilitators train circles leaders and help them to start the different circles. They also help circles to obtain needed input from support groups and to keep upper management appraised of the progress of the program.
A steering committee is the central coordinator of the quality circles program. It is composed of the facilitators and representatives of the major functional departments in the organization. The steering committee determines the policies and procedures of the program and the issues that fall outside of the circle attention. The committee also coordinates the different training programs and guide program expansion.

Figure 2-6: Quality circle program structure (Worley, 1993 : 318)

The popular press is full of glowing reports of quality circles’ success. Among the reported results are reductions in costs, improvements in the quality and quantity of production, and increased employee skill development, motivation, organizational commitment, and satisfaction. These results suggest that circles affect both the organization, through group ideas that are implemented, and the individual, through membership in a problem-solving group. (Worley, 1993, p. 316)

Empowerment
The dictionary definition of empowerment is to invest people with authority. Its purpose is to tap the enormous reservoir of creativity and potential contribution that lies within every worker at all levels.

Empowerment is an environment in which people have the ability, the confidence, and the commitment to take the responsibility and ownership to improve the process and initiate the necessary steps to satisfy customer requirements within well-defined boundaries in order to achieve organizational values and goals. (Sacre, 1999, p. 77)

In order to create the empowered environment, three conditions are necessary.

1. **Everyone must understand the need for change.** People fear change. The effective communication of why the organization needs to change is critical to success. In addition, people need to understand the role they will play in the change process. Senior management must understand that people change for their own reasons, not for reasons of the organization.

2. **The system needs to change for the new paradigm.** The system needs to change to reinforce and motivate individual and group accomplishments. Individuals and groups must understand that freedom to act and sometimes to fail is not only OK but encouraged.

3. **The organization must enable its employees.** Enablement means providing information, education, and skill. To ask people to change work habits without providing them with the tools for change only increase resistance to the change process. (Sacre, 1999, p. 77)

There is nothing miraculous about empowerment. People want to be more in charge of their jobs and careers. After all, they do that successfully in their personal lives every day. Most people appreciate and value the trust and responsibility inherent in an environment that supports empowered people and their actions. When people have the information, education, and skills required to perform in a changed environment, understand their boundaries of empowerment, and realize the necessity for change, their resistance to that changes decreases greatly.
Involving employees, empowering them, and bringing them into the decision-making process provide the opportunity for continuous process improvement. The untapped ideas, innovations, and creative thoughts of the employees can make the difference between success and failure.

**Organization culture**

The concept of 'organization culture' has become popular since the early 1980s. There is no consensus about its definition but most authors will agree that it is something holistic, historically determined, related to the things anthropologists’ study, socially constructed, soft and difficult to change. It is something an organization has, but can also be seen as something an organization is.

Organization cultures should be distinguished from national cultures. Cultures manifest themselves, from superficial to deep, in symbols, heroes, rituals and values. National cultures differ mostly on the values level; organization cultures at the levels of symbols, heroes and rituals, together labeled 'practices'. Differences in national cultures have been studied for over fifty countries. They show five independent dimensions of values: power distance; individualism versus collectivism; masculinity versus femininity; uncertainty avoidance; and long-term versus short-term orientation. National culture differences are reflected in solutions to organization problems in different countries, but also in the validity of management theories in these countries. Different national cultures have different preferred ways of structuring organizations and different patterns of employee motivation. For example, they limit the options for performance appraisal, management by objectives, strategic management and humanization of work. (Frost, 1985)
Organization culture is what the employees perceive and how this perception creates a pattern of beliefs, values, and expectation. Since organizational culture involves shared expectations, values, and attitudes, it exerts influence on individuals, groups, and organizational processes. (Matteson, 1999: 72)

Organization culture is a pattern of basic assumptions that invented, discovered, or developed by a given group as it learns to cope with the problems of external adaptation and internal integration -- that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems (Schein, 1999, p. 72)

Following figure illustrated the components of organization culture,

![Figure 2-7: Levels of corporate culture (Worley, 1993, p. 527)](image)

Research into organization cultures identified six independent dimensions of practices: process-orientated versus results-orientated; job-orientated versus employee-orientated; professional versus parochial; open systems versus closed systems; tightly versus loosely controlled; and pragmatic versus normative. The position of an organization on these dimensions is determined in part by the business or industry the organization is in. Scores on the dimensions are also related to a number of other 'hard'
characteristics of the organizations. These lead to conclusion about how organization cultures can be and cannot be managed.

Culture by definition is elusive, intangible, implicit, and taken for granted. But every organization develops a core set of assumptions, understandings, and implicit rules that govern day-to-day behavior in the workplace . . . . Until newcomers learn the rules, they are not accepted as full-fledged members of the organization. Transgressions of the rules on the part of high-level executives or front-line employees result in universal disapproval and powerful penalties. Conformity to the rules becomes the primary basis for reward and upward mobility. (Robbin, 1998, p. 594)

Managing international business means handling both national and organization culture differences at the same time. Organization cultures are somewhat manageable while national cultures are given facts for management; common organization cultures across borders are what keep multinationals together.

Organizational culture refers to a system of shared meaning held by members that distinguishes the organization from other organizations. This system of shared meaning is, on closer examination, a set of key characteristics that the organization values. (Robbin, 1998: 595)

A dominant culture expresses the core values that are shared by a majority of the organization’s members. When we talk about an organization’s culture, we are referring to its dominant culture. It is this macro view of culture that gives an organization its distinct personality. Subcultures tend to develop in large organizations to reflect common problems, situations, or experiences that members face. These subcultures are likely to be defined by department designations and geographical separation. The purchasing department, for example, can have a subculture that is uniquely shared by members of that department. It will include the core values of the dominant culture plus additional values unique to members of the purchasing department. Similarly, an office or unit of the organization that is physically separated from the organization’s main operations may take on a different personality. Again, the core values are essentially retained but modified to reflect the separated unit’s distinct situation. (Robbin, 1998: 597)

The research indicates that national culture has a greater impact on employees than does their organization’s culture. For the research’s company, cultural different between
members in the organization causes cultural problem. Top management national culture has formalized the organization culture for the research’s company. These call the ethnocentric of organization culture. Foreigner dominant Thai people by thinking that their national culture is better.

Culture by definition is elusive, intangible, implicit, and taken for granted. But every organization develops a core set of assumptions, understandings, and implicit rules that govern day-to-day behavior in the workplace . . . . Until newcomers learn the rules, they are not accepted as full-fledged members of the organization. Transgressions of the rules on the part of high-level executives or front-line employees result in universal disapproval and powerful penalties. Conformity to the rules becomes the primary basis for reward and upward mobility. (Robbin, 1998 : 601)

There is one popular theory that can be applied when studying organization culture is Hofstede theory. For Hofstede theory, he classify that the national culture or organization culture which based on national culture to 4 categories as follow,

- **Degree of power distance** – describe about the complexity in the organization. Sometimes it is related to the organization structure. However, power distance is mean how far of your position and top executives in the company. If the are high organization structure, it should be high power distance and a lot of red tape in the organization.
- **Individualism or collectivism** – describe how the member in organization perform their job. Individualism mean everyone performs there job but do not care or share information with another people even though it’s the same organization. Only a little degree of communication in this culture. But collectivism is the counterpart of individualism, everybody work collaborative, high degree of communication and high degree of cohesiveness. This kind of culture is mostly based on national culture.
- **Uncertainty avoidance** – describe the degree that the people in the organization willing to face the fast changing and fluctuated environment. This culture can affect the managerial function in the part of their planning to cope with uncertainty. If the organization culture is high degree of uncertainty avoidance that mean the member would like to cope with the uncertainty and risk-taking that can cause a lot of benefit to the organization. National culture is playing a major role effect the organization culture for the uncertainty avoidance.
- **Masculinism or feminism** – this king of national culture is substance to object related or human being related. For masculinism culture, everything is based on substantial object or materialism and only a little degree to care about another people. But feminism is different, human relation is the
major one that take into consideration. Any activity the people will perform, they will think about the relationship with another people first.

This theory can be applied to this research because the research’s company is the multinational company then the national culture will play a major role that affect the organization culture. However, it can be both supportive and destructive organization culture.

However, there are many ways that the employee learns culture. Cultures can transmitted to employees in a number of forms, the most potent being stories, rituals, material symbols, and language.

The story typically contain a narrative of events about the organization’s founders, rule breaking, rags-to-riches successes, reductions in the work force, relocation of employees, reactions to past mistakes, and organizational coping. These stories anchor the present in the past and provide explanations and legitimacy for current practices.

Rituals quite different from story, are repetitive sequences of activities that express and reinforce the key values of the organization, what goals are most important, which people are important and which are expendable.

Materials symbols, the layout of corporate headquarters, the types of automobiles top executives are given, and the presence or absence of corporate aircraft are a few examples of material symbols. Others include the size of offices; the elegance of furnishings, executive perks, and dress attire. These material symbols convey to employees who is important, the degree of egalitarianism desired by top management, and the kinds of behavior (for example, risk taking, conservative, authoritarian, participative, individualistic, social) that are appropriate.
Language, Many organizations and units within organizations use language as a way to identify members of a culture or subculture. By learning this language, members attest to their acceptance of the culture and, in so doing, help to preserve it. (Koontz, 1993)

**Communication within organization**

The managerial functions of planning, organizing, leading and controlling all involve communicative activity. In fact, communication is an absolutely essential element in all-organizational processes.

Communication is the glue that holds organization together. Communication assists organizational members to accomplish both individual and organizational goals, implement and respond to organizational change, coordinate organizational activities and engage in virtually all organizationally relevant behaviors. To the extent that organizational communication are less effective than they might be. For example, in many companies, new-employee orientation program represent the first important opportunity to begin the process of effective communication with employees. Serious problem arise when directives are misunderstood, when casual kidding in a work group lead to anger, or when informal remarks by a top managers are distorted. Each of these situations is a result of a breakdown somewhere in the process of communication.

The general process of communication contains five elements – the communicator, the message, the medium, the receiver, and feedback. It can be simply summarized as who...says what...in what way...to whom...with what effect?

The word communication is derived from the Latin communism, meaning “common”. Hence, we can define communication as the transition of information and understanding through the use of common symbols. The common symbols may be verbal or nonverbal. (www.dl.ac.uk)

The design of an organization should provide for communication in four distinct directions: downward, upward, horizontal, and diagonal.

**Downward communication**

This type of communication flows downward from individuals in higher levels of the hierarchy to those in the lower levels. The most common forms of downward
communication are job instructions, official memos, policy statements, procedures, manuals, and company publications. (Matteson, 1999)

**Upward communication**

An effective organization needs upward communication as much as it needs downward communication. In such situations, the communicator is at a lower level in the organization than the receiver. Some of the most common upward communication flows are suggestion boxes, group meetings and appeal or grievance procedures. In their absence, people somehow find ways to adopt nonexistent or inadequate upward communication channels. This has been evidenced by the emergence of “underground” employee publications in many large organizations. (Matteson, 1999)

**Horizontal Communication**

Often overlooked in the design of most organizations is provision for horizontal communication. Peer-to-peer communication often is necessary for coordination and also can provide social need satisfaction. (Matteson, 1999)

**Diagonal Communication**

While it is probably the least-used channel of communication in organizations, diagonal communication is important in situations where members cannot communicate effectively through other channels. (Matteson, 1999)

**Effects of Culture and Team Communication/Cooperation**

Culture affects work groups and teams through three interrelated but distinct mechanisms in our organization, as you will be seen. They operate at different organizational levels but all contain both cognitive and motivational elements. The three mechanisms are:
• Cultural norms/values
• Work group cultural composition
• Relative cultural distance

Cultural Norms/Values Concepts underlying this idea are:
• Values influence perception of ambiguous stimuli
• Values provide conceptions of desirable end states
• Scripts provide a behavioral sequence in response to cues

An individual's culturally based norms for functioning in a work group are based on their prior experience with groups in their own culture. When confronted with a new work group and faced with ambiguous cues as to how to behave, individuals rely on scripted behavior from their own culture.

Group heterogeneity (the number of different cultures in the work group) can have both positive and negative effects. Negative effects because of increased process losses (difficulty in communicating, etc.) and positive effects because of more different ideas and approaches. Both types of effect exist in the real world organization. Also, diversity may cause groups to focus more attention on group processes, thereby improving them.

**Organization structure**

An organizational structure reflected the way the organization divided up, and set to arrange the chain of command in the formal configuration between individuals and groups. An appropriate structure was an essential attainment of an organization's goals. These referred to the way in which an organization organizes its employees for goal directed activities. The way the human parts of an organization were fitted together into relatively fixed relationship is largely defined patterns of social interaction, coordination, and task-oriented behaviour.
An organizational structure defines how job tasks are formally divided, grouped, and coordinated. There are six key elements that managers need to address when they design their organization's structure. These are: work specialization, departmentalization, chain of command, span of control, centralization and decentralization, and formalization. (Robbins, 1998: 478)

Organizational structure is considered by many to be "the anatomy of the organization, providing a foundation within which the organization functions." Thus, the structure of an organization, similar to the anatomy of a living organism, can be viewed as a framework. The idea of structure as a framework "focuses on the differentiation of positions, formulation of rules and procedures, and prescriptions of authority." Therefore, the purpose of structure is to regulate, or at least reduce, uncertainty in the behavior of individual employees. (Matteson, 1999: 556)

Mainly the organization compose of four major elements, organization design should take these elements into consideration. These four elements can be described below,

- Division of labor – it's the way the organization assigns the job to each resource within the organization. In other word, we can say that the division of labor is the degree of job specialization for each member.

Today we use the term work specialization or division of labor to describe the degree to which tasks in the organization are subdivided into separate jobs. (Robbin, 1998, p. 455)

- Delegation of authority – this describe how the organization delegate their authority to another member of the organization. The delegation of work should be one of these two – centralization or decentralization. However, these two types of delegation can use mix within one organization.

The term centralization refers to the degree to which decision-making is concentrated at a single point in the organization. The concept includes only formal authority, that is, the rights inherent in one's position. Typically, it's said that if top management makes the organization's key decisions with little or no input from lower-level personnel, then the organization is centralized. In contrast, the more that lower-level personnel provide input or are actually given the discretion to make decisions, the more decentralization there is. (Robbin, 1998: 457)
• Departmentalization – consider as how the organization departmental their sub units. There are many types for departmentalization like functional departmentalization, product departmentalization, territory departmentalization and matrix departmentalization.

Once you’ve divided jobs up through work specialization, you need to group these jobs together so common tasks can be coordinated. The basis by which jobs are grouped together is called departmentalization. (Robbin, 1998: 470)

• Span of control – describe how many subordinates belong to one manager. In other word, how many subordinates under the responsible of one manage. The span of control defines the line of authority within the organization.

How many subordinates can a manager efficiently and effectively direct? This question of span of control is important because, to a large degree, it determines the number of levels and managers an organization has. All things are being equal. Wider or larger the span is meant the more efficient the organization.

Small spans have their advocates. By keeping the span of control to five or six employees, a manager can maintain close control. But small spans have three major drawbacks. First, as already described, they’re expensive because they add levels of management. Second, they make vertical communication in the organization more complex. The added levels of hierarchy slow down decision-making and tend to isolate upper management. Third, small spans of control encourage overly tight supervision and discourage employee autonomy.

Wide spans of control are consistent with recent efforts by companies to reduce costs, cut overhead, speed up decision-making, increase flexibility, get closer to customers, and empower employee. However, to ensure that performance doesn’t suffer because of these wider spans, organizations have been investing heavily in employee training. Managers recognize that they can handle a wider span when employees know their jobs inside and out or can turn to their co-workers when they have questions. (Robbin, 1998: 471)

Organizational structure is a backbone of the company; because it consists of key managerial decisions determine organization structures as dividing the work, delegating authority, departmentalizing jobs into groups, line of authority and determining spans of
control. All this key elements can affect to the productivity and job role of each employee. (Galbraith, 1977)

There are two terms of organization structure as line of authority and delegation of work that are used to determine its effect on productivity of each employee.

The organization structure in term of line of authority can affect on productivity, because if the line of authority is unclear, it can cause some difficulties and confusing to employees in performing their jobs. It is also difficult to the managers for evaluating production variances that may be mislead and cause some dissatisfaction to employees, if the line of authority is not clearly specified.

Another term of delegation of work can also affect on work performance and productivity, if the manager delegates work not to the right person, so he/she can feel dissatisfied to perform a task that is out of his/her scope area of responsibility or authority. Moreover, the person who has not enough skill or knowledge may feel against to the delegated tasks and be able to affect their performance as low productivity or even counter-productivity.

Mintzberg’s book places considerable emphasis on structure and his definition proposes it as the summation of the ways in which a firm’s labor is directed and coordinated into tasks. Although this definition’s simplicity is appealing, it leads us to view an organization in term of a division of labor and the coordination of management control to maintain that. It is an outlook typically portrayed by the firm’s organization/management chart, which identifies quite precisely who is responsible for what and to whom. This merely lists a functional relationship, which although important, reveals only part of the organization structure. (Harrington, 1991, p. 49)

The idea of a boundary is an important aspect of structure since it enables us to determine how integrated the structure is with both its internal and external environments. For manager also, the boundary is useful since it enables them to identify their area of control.

However, with the increasing implementation of information technology the issue has taken on greater significance. Boundaries can no longer be identified. Modern technology systems directly link organizations
into other organizations, thus merging in part their established boundaries. (Harrington, 1991, p. 50)

**Job role**

Job role or generally called job description. Information gathered by using one or more of the job analysis methods result in the organization being able to create a job description and job specification. The former is a written statement of what a jobholder does, how it is done, and why it is done. It should accurately portray job content, environment, and conditions of employment. The job specifications state the minimum acceptable qualifications that an employee must possess to perform a given job successfully. It identifies the knowledge, skills, and abilities needed to do the job effectively. So job descriptions identify characteristics of the job, while job specifications identify characteristics of the successful job incumbent.

The job description and specification are important document for guiding the selection process. The job description can be used to describe the job to potential candidates. The job specification keeps the attention of those doing the selection on the list of qualifications necessary for an incumbent to perform a job and assists in determining whether or not candidates are qualified. (Feder, 1999)

The central core to any discussion of work or organizational behavior is the concept of a job. It is the aggregation of tasks that define an individual's duties and responsibilities. When an organization is created, managers have to determine what task needs to be accomplished for the organization to achieve its goals and who will perform those tasks. (Robbin, 1998 : 377)

**Inventory management**

The inventory requirement of the firm depends on the network structure and the desired level of customer service. Theoretically, a firm could stock every item sold in a
facility dedicated to service each customer. Few business operations could afford such a luxurious inventory management commitment because the risk and total cost would be prohibitive. The objective is to achieve the desired customer service with the minimum inventory commitment, consistent with lowest total cost. Excessive inventory may compensate for deficiencies in basic design of a logistics network and to some degree inferior management.

Logistical strategies are designed to maintain the lowest possible financial assets in inventory. The basic goal of inventory management is to achieve maximum turnover while satisfying customer commitments. A sound inventory management policy is based on five aspects of selective deployment: customer segmentation, product requirements, transport integration, time-based requirements and competitive performance. (Closs, 1996: 31)

Managers must establish and implement inventory policies on the basis of strategic consideration. Inventory management is the integrated process that operationalized the firm’s and the value chain’s inventory policy. The reactive or pull inventory approach uses customer demand to pull product through the distribution channel. An alternative philosophy is a planning approach that proactively schedules product movement and allocation through the channel according to forecasted demand and product availability. A third or hybrid logic uses a combination of the first two approaches resulting in an inventory management philosophy that response to product and market environments.

Inventory control is a mechanical procedure for implementing an inventory policy. The accountability aspect of control measures unit on hand at a specific location and tracks additions and deletions to the base quantity. Accountability and tracking can be performed by manual or computerized techniques. The primary differentials are speed, accuracy, and cost. (Closs, 1996: 262)

In order to implement the desired inventory management policies, control procedures must be devised. These define how often inventory levels are reviewed and
compared against the inventory parameters defining when to order and how much to order.

Managerial function

Managerial function is the most important function for managers in every level. Four of the most important functions are planning, organizing, directing, and controlling. The following section will describe the four managerial functions in detail.

Planning. Planning is a key management function. All organizations operate in uncertain environments. For an organization to succeed, management somehow must cope with, and adapt to, change and uncertainty. Planning, if used properly, offers management help in adapting to change.

On its own, the organization would follow some kind of course during the next five years. If management wishes to have any control over that course, however, it must plan. Otherwise, it will have to rely on defensive reactions rather than on planned actions. Management will be forced to respond to current pressures rather than the organization’s long run needs. (Matteson, 1999: 55)

However, the approach to planning, the manner of arriving at plans, and the completeness of plans can differ greatly from organization to organization. Formal planning is an activity that distinguishes managers from non-managers. Formal planning also distinguishes effective managers from ineffective ones.

Planning includes all the activities that lead to the definition of objectives and to the determination of appropriate courses of action to achieve those objectives. The major benefits include the following,

1. Planning forces managers to think ahead.
2. It leads to the development of performance standards that enable more effective management control.
3. Having to formulate plans forces management to articulate clear objectives.

4. Planning enables an organization to be better prepared for sudden developments.

In some organizations, planning is the combined effort of managers and staff personnel. In other organizations, the top management group does planning. In still others, one individual does it. Planning activities can range from complex, formal procedure to simple and informal ones. Plans and planning inherently involve objectives, actions, resources, and implementation directed toward improving an organization’s performance in the future. (Byrne, 1992)

Strategic planning is a process that involves the review of market conditions; customer needs; competitive strengths and weaknesses; sociopolitical, legal, and economic conditions; technological developments; and the availability of resources that lead to the specific opportunities or threats facing the organization.

In practice, the development of strategic plans involves taking information from the environment and deciding upon an organizational mission and upon objectives, strategies, and portfolio plan. (Matteson, 1999: 56)

The strategic planning process must be tied to objectives and goals at all levels of management. The output of the strategic planning process is the development of a strategic plan. There are four components to such plans; mission, objectives, strategies, and the portfolio plan.

The mission statement should be a long-run vision of what the organization is trying to become – the unique aim that differentiates it from similar organizations. A critical phase of planning is the determination of future outcomes that, if achieved, enable the organization to satisfy the expectations of its relevant environment. The desired future outcomes are objectives. When an organization has formulated its mission and objectives, it knows where it wants to go. The next step is to develop the strategies. The role of strategy in strategic planning is to identify the general approaches that the organization will utilize to achieve its organizational objectives. The final phase of strategic planning process is the formulation of the organizational portfolio plan. In reality, most organizations at a particular time are a portfolio of businesses. (Matteson, 1999, p. 57)
Organizing There is no doubt that people and those who want to corporate will work together most effectively if they know the part they are to play in any team operation and they way their roles relate to one another.

It is this sense that we think of organizing as (1) the identification and classification of required activities, (2) the grouping of activities necessary to attain objectives, (3) the assignment of each grouping to a manager with the authority (delegation) necessary to supervise it, and (4) the provision for coordination horizontally (on the same or similar organizational level) and vertically (for example, corporate headquarters, division, and department) in the organization structure. (Koontz, 1993, p. 244)

Organizing is a guidance for how manager making decision for their business through the line of organization structure. Decision may be classified as programmed or non-programmed, depending on the type of problem. Decisions are programmed to the extent that they are repetitive and routine and a definitely procedure has been developed for handling them. Decisions are non-programmed when they are novel and unstructured and there is no established procedure for handling the problem.

The decision-making process entails following a number of steps. Sequentially; these are: 1) establishing specific goals and objectives and measuring results, 2) problem identification and definition, 3) establishing priorities, 4) consideration of causes, 5) development of alternative solutions, 6) evaluation of alternative solution, 7) solution selection, 8) implementation, and 9) follow-up. (Schein, 1987)

Research suggests that decisions made by groups are superior to those made by individuals. However, there are aspects of group decision making that tend to have negative effects. These include pressure to conform and the disproportionate influence exerted by a dominant group member. One of the advantages of group decision making is that it can facilitate the identification of creative and innovative solutions to problems. (Matteson, 1999, p. 529)
Directing. Directing is another important managerial function. Directing is in the form that how manager lead their organization and also their subordinates. Leadership does not take place in a vacuum. There are three important variables with which every leader must deal: the people who are being led, the task that the people are performing, and the environment in which the people and the task exist.

We define leadership as the process of influencing others to facilitate the attainment of organizationally relevant goals. The role of informal leader can be every bit as important to a group’s success as is that of the formal leader. (Matteson, 1999: 409)

All leader of effective groups share four characteristics in common:
1. They provide direction and meaning to the people they are leading. This means they remind people what is important and why what they are doing makes an important difference.
2. They generate trust.
3. They favor action and risk taking. That is, they are proactive and willing to risk failing in order to succeed.
4. They are purveyors of hope. In both tangible and symbolic ways they reinforce the notion that success will be attended. (Bennis, 1995, p. 101)

A leader in a specific national culture may need to apply various attitudes and behaviors to exercise the right blends of influence. This blend may be different in different cultural settings. Hofstede’s four cultural dimensions provide a starting point for studying cross-cultural leadership effectiveness. The complexities of leading in a global environment require the careful study of the culture, history, expectations, and working environments that face the leader. (Vroom, 1973)

Controlling. The controlling function consists of actions and decisions managers undertake to ensure that actual results are consistent with desired results. Effective control requires three basic conditions; 1) standards that reflect the ideal outcomes, 2) information that indicate deviations between actual and standard results, and 3) corrective action for any deviations between actual and standard results.
Three different types of control methods are precontrol, concurrent and feedback.

- Precontrol: Precontrol methods increase the possibility that future actual results will compare favorably with planned results. Policies are important precontrol methods since they define appropriate future action. Other protocol methods involve human, capital and financial resources.

- Concurrent control: Concurrent control consists primarily of actions by supervisors who direct the work of their subordinates. Direction refer to the acts managers undertake 1) to instruct subordinates in the proper methods and procedures and 2) to oversee the work of subordinates to ensure that it is done properly.

- Feedback: Feedback control employ historical outcomes as bases for correcting future action. Four feedback methods are widely used in business: financial statement analysis, standard cost analysis, employee performance evaluation, and quality control. (Koontz, 1993)

Each control method, whether precontrol, concurrent control, or feedback, requires the same three fundamental elements: standards, information, and corrective action.

**Risk management**

Risk management is concerned with avoiding unacceptable risks and managing exiting risks in order minimizing any harmful impact they may make.

According to the Economist Intelligence Unit (Managing Business Risks, 1995), business risk is the threat that an event or action will adversely affect an organization's ability to achieve its business objectives and execute its strategies successfully. Research carried out among 3,000 executives showed that only 5 percent of them were absolutely confident that their risk control systems were successfully identifying, evaluating, minimizing and managing all the potential significant risks affecting their business. (Armstrong, 1999, p. 293)
A company, which is a market leader, may run the risk of being threatened by competitors – to what extent does the company monitor the competition, regularly assess customer requirements and seek improvements in the product or level of service to maintain competitive edge.

The categories of risk are as follow,

- Commercial risk – increased competition, better products or service available elsewhere, price cutting by competition, problem with suppliers, key customers failing or switching their business elsewhere.
- Economic risk – recession in the nation or oversea markets, adverse exchange movements, worldwide decline in prices such as oil and gas.
- Political risk – adverse political decisions (legislation, tax changes, regulatory changes)
- Technological development – new developments making the company’s products or services obsolescent.
- Nature disasters – fire, flood, riots, etc.
- Crime – embezzlement, fraud, computer crime, industrial espionage.
- Fashion – changes in fashion affecting demand.

Above mention are categories of risk, the following are the main ways to minimize risk,

1. Institute financial controls to prevent fraud.
2. Set up compliance arrangements to ensure that regulations are adheres to.
3. Monitor key transactions or those above a certain value and the people who make them to ensure that they are carried out in accordance with policies and procedures and do not entail undue risk.
4. Insure against such risks as a major customer becoming insolvent, natural disasters.

5. Diversify into products or services, which have a different risk profile, avoid relying too much on one supplier.

6. Hedge – take action which will provide compensation if risk occurs. The most typical area where hedging take place is foreign currency transactions, which might involve buying the currency in advance.

The following are the way manager can manage the risk according to Economist Intelligence Unit,

As suggest by the Economist Intelligence Unit, the key approaches to managing risk are as follows:

- Recognize that risk assessment is a continuous activity – you cannot take the risk of not assessing risk;
- Make risk assessment and management a major concern of the board and top management;
- Ensure that everyone in the organization knows that they are in the business of identifying, reporting on and managing risks;
- Focus on the avoidance of unacceptable business risks followed by the management of other business risks to reduce them to an acceptable level;
- Formulate a business risk controls policy and ensure that everyone knows and understand it;
- Anticipate business risk at the source and monitor risk controls continuously;

Remember that the primary sources of business risk are ineffective processes and controls rather than ineffective people. (Amstrong, 1999 : 295)

**Total quality management**

One of high employee involvement, TQM pushed decision-making power downward in the organization, provides relevant information to all employees, ties rewards to performance, and increases workers' knowledge and skill through extensive training. When implemented successfully, TQM is also closely aligned with a firm’s
overall business strategy and attempt to change the entire organization towards continuous quality improvement.

Total quality management (TQM) is the most recent and perhaps the most comprehensive approach to employee involvement. It is a long-term effort that orients all of an organization’s activities around the concept of quality. Total quality is achieved when the organizational processes reliably produce products and service that meet or exceed customer expectations and when commitment to the continuous improvement of all processes becomes a part of the organization’s culture. TQM is very popular in the 1990s, and many organizations, include Federal Express, Motorola, H. J. Heinz, Colgate Palmolive, Marriott, Cummins Engine, and the U.S. Army and Navy have implemented total quality intervention. Diethelm also implement TQM in the part of pharmaceutical trading division. (Worley, 1993, p. 325)

Total quality management is typically implemented in five major stages:

1. Senior management commitment. This stage involves gaining senior management support and long-term commitment to TQM. Because TQM generally require large investments in training, as well as significant modifications of company policies, top executives must be willing to make these investment and changes.

2. Training in quality methods. TQM implementation requires extensive training in the principles and tools of quality improvement. Members typically learn problem-solving skills and statistical process control (SPC) techniques.

3. Quality improvement projects. This phase of TQM implementation involves individuals and work groups applying the quality method to improve organizational processes. They seek to identify output variations, to intervene to minimize deviations from quality standards, to monitor improvements, and to repeat this quality improvement cycle definitely.

4. Measure progress. This stage of TQM implementation involves the measurement of organizational processes against quality standards. These standards are known as benchmarks and represent the best in organizational achievements and practices for different processes. Benchmarks can be a competitor’s performance level or some level of performance generally accepted as “world class”.

5. Reward accomplishment. In this final stage of TQM implementation, the organization attempts to link rewards to improvements in quality. TQM does not monitor and reward outcomes normally tracked by traditional reward systems, such as the number of unit produced. Such measures do not necessarily reflect product quality. Rather, TQM rewards members for “process-oriented” improvements by focusing on gains in customers’ perceived satisfaction with product performance and other indicators of quality. (Besterfield, 1999 : 57)
Thesis Framework

The research follows an action research model. Thus, the research process framework is as follows:

![Thesis Framework Diagram](trochim.human.cornell.edu)

Figure 2-8: Thesis Framework (trochim.human.cornell.edu)

The above thesis framework illustrates the steps or the phases that will be used throughout this research.

Phase 1: Pre-ODI – This phase is an important phase to start the study right. It establishes the point of reference to determine the change to be achieved in the Post ODI. In this phase the current business process were analyzed, the actual situation were assessed in terms of the critical variables considered in the study and then recommendations were made for some preliminary revision which would be taken in the ODI Phase. To find out what were existing problems or issues that would likely to be solved is the main concern of this phase. Feasibility study was also included in this study in order to measure the probability of alternative propose. Generally, this phase is called as “As-Is analysis”.

Phase 2: ODI implementation – Based on the findings of the first phase, In this phase the researcher determined the kind of ODI appropriate and relevant to the identified problems and implement these interventions in the organization to achieve what the organization would like to change. How to change them is the major propose
of this phase. A set of ODI was introduced, and decisions were made to select and implement the ODI to solve or minimize the existing issues.

Phase 3: Post-ODI – This phase is the last phase of this research. The main purpose was to find the gap or congruence between as-is situation and to-be situation. Was the gap positive or negative change? If positive, this meant that there was an increase in the way the variables are assessment and the intervention may have caused the change positively. If the negative, it is likely that the intervention has instead decreased the level of assessment on those identified variables. If congruent or no change at all, it is likely that the ODI did not make any impact on the identified variables. Each variable was analyzed to find out the variance that occurs after implement ODI. The change could be both positive and negative. Or the issues still remain unchanged.
The above framework illustrates the conceptual framework for this research drawn from the thesis framework. The ultimate direction of this framework was engage in the long term the organization under study to move towards the emerging concept of the learning organization. The two main variables considered for assessment at the Pre ODI are critical for the organization to become a learning organization. These two concepts are: organization-related and management-related. These two key variables are keys that play a great part in the catalytic for building a learning organization.
A learning organization, systematically defined, is an organization, which learns powerfully and collectively and is continually transforming itself to better collect, manage, and use knowledge for corporate success. It empowers people within and outside the company to learn as they work. Technology is utilized to optimize both learning and productivity. (Marquardt, 1996)

Learning organization actually focuses on 4 sub-systems as organization subsystem (organization vision, culture, structure and strategy), people subsystem (managers, employees, community and external party), knowledge subsystem (data storage, data transfer and utilization) and the last technology subsystem (information technology and electronic performance support system). (Marquardt, 1996)

As shown in the conceptual framework, the focused variable categorized to organizational related and management related. The organization related composes of organization culture, for this variable the focus was only inter-group norms that obstruct the whole group benefit. For organization structure the focus was on how to redesign organization to fit with the researched company business process. Job role was also the same; main purpose was to reduce the redundancy if it exists. For inventory control, the critical process in pharmaceutical business, goods business practice and information technology was used to maximize the capability of inventory management and cost reduction.

For the management related, the variables consisted of managerial function to analyze and know how well researched company’s manager performs their managerial function. Risk management was the variable that the researcher tried to analyze the current risk management process and how well manager and staff dealt with uncertainty situation. For the last variables, total quality management in the researched company.
TQM already exist in the present, the researcher wanted to know whether it was effective. If not the researcher would find out the methodology to improve them according to the TQM best practices like quality circle.

So the set of ODI that the researcher used in this study is considered as organization transformation catalytic processes to build the learning organization. Cultural change focused on the intention to change the destructive inter-group norm to become supportive inter-group norm. Structural redesign was intended to change the organization structure from complicated and not flexible to the one that more simple and more flexible. Job redesign intended to reduce the redundancy in each employee job description and increase job specialty. ERP and SCM were used as the management information system to streamline the inventory management process and also provide the more accuracy data to support management decision-making process.

For the last quality circle was intended to use to correct the inefficient production process and also optimize the existing TQM to benefit the whole group of company.

On the whole, the action research process used in this research engaged the subject organization in a cyclic process of problem-identification, processing of information to determine the OD interventions, hypothesizing and implementing the process to effect the change and assessing the impact of the activities designed to achieve the objectives of the ODI.
CHAPTER 3

RESEARCH METHODOLOGY

This chapter presents the kind of research design applied that included the research design model, the action research process and process flow. In it is included the action research map, that identified the respondents, as well as the research methodology, the sampling procedure used, the research instrument/questionnaires, including the tools for qualitative and quantitative analysis used to analyze the collected data. Also in it are described the target sample in collecting the data, the collection of primary and secondary data including with the gathering data procedures.

This chapter also includes the design and development of OD intervention tools used throughout the research. The tools and instruments used throughout the research were the sets of OD intervention implemented after the pre-ODI (business as-is analysis).

Research Design

The research design of this study was an action research using both quantitative and qualitative in determining the differences between pre and post-ODI conditions on the identified variables. Both quantitative and qualitative analysis were substantively in answering the research questions and hypotheses. The qualitative analysis intended to use to supplement the quantitative analysis.

The research was focused on pharmaceutical logistic supply chain and based on experimental fundamental research methodology determined differently in each of the 3 research phases as was described in each phase as follow,
Phase 1: Pre-Organization development intervention. There were several methodologies or many steps carried out during this phase which included research preparation to specify the researched organization and specify the target sample group, to carry out feasibility study to estimate resource and probability to conduct this research, to gather the data from the target sample group to analyze according to the pre-ODI variables, to perform the business process review for finding out what is the real concern of the organization and translate them to be an research issue if necessary and also to find the intervention that suitable for each concerns and issues. For this phase, it could be generally called as as-is business analysis. This phase included the follow activities,

- Research preparation: to prepare who are the respondent of the questionnaires and interview.
- Feasibility study: to formal study whether it's possible or not to implement the ODI in the researched organization.
- Business process review: this step was the real collection of the data; questionnaire and interview also have to be conduct at this phase.

Phase 2: OD intervention implementation. This phase was generally called as organization development prototyping process. This phase was the most important phase when compared to the rest. The methodologies that were used during this phase are to use the analyzed data from phase 1 to design the best-fit organization development intervention for those variables. The design phase started from conceptual design, detail design/realization and implement the design outcome to the organization. If necessary, training session should be conduct in this phase for some interventions that would affect the routine work of organization employee like how to use enterprise resource planning tools to streamline the supply chain process. However, the implementation methodologies
that were used were both big bang and parallel implementation methodology. Some variables like organization structure, job role and risk management could use big bang methodology but some that related to decision-making and effect the critical business process flow were better to implement the new design parallel with the existing one. The following section is the list of activities included in this phase,

- ODI alternative proposal, after collect the data from the previous phase – the task in this step is to analyze the data and propose the ODI alternatives for top executive to make decision.

- Prototyping, the ODI were implement for some sample group and demonstrate them to top executives.

- ODI Implementation, this step was the exact implementation of selected ODI.

Phase 3: Post organization development intervention. This phase can be generally called as to-be analysis. The researcher had to analyze the result of the ODI that caused or generated the effect from phase 2 after implementation. The result that happens here could be different from the expected result that specify in the research hypothesis. The same instrument was used during the pre-ODI phase is the same to used here to measure the outcomes of each variable after OD intervention implementation. Some adjustments or contingency plan were taken into consideration and carried out to improve or correct the unexpected result that cause from the implementation process. All are the methodologies that were used within this phase. The steps that were included in this phase is listed as follow,

- ODI fine-tuned, after implementing ODI; the process fine-tuned were properly applied.
• Business process analysis, this step was the comparison step of as-is and to-be. The main propose was to find the gaps and evaluate the effectiveness of OD process.

• ODI adjustment, some adjustment should be applied or new ODI should be proposed during this step.

The following diagram is show the completed process of thesis methodology,

**Figure 3-1 : Research design and methodology**

**The Sample**

As mention early in chapter 1, the location of study in this research was head office of Diethelm (Thailand) Co.,Ltd, head office of Diethelm Pharmaceutical division and manufacturing plant of OLIC (Thailand) Co.,Ltd.. The first office was located at ground floor Diethelm Tower B in the central of Bangkok and total members in office were about 5 persons who mostly consisted of top executives. The second office was located at 2 floor Diethelm Pharmaceutical division on New Road and total members in this location were 45 persons who consisted of top executive, executive brand manager, brand manager, electronic data processing staff, financial and administration staff. The
last office locate at ground floor OLIC (Thailand) Co., Ltd., Bangpa-In which mostly consisted of supply chain manager, production and warehouse staff. However, these staff also worked on non-fixed location depends on their business activities.

The target respondents consisted of 5 top managements, 10 brand managers, 6 financial and administration directors and 9 shop floor control managers in both office and manufacturer site. It also included some data collection from secondary source of data about organization chart to know how they departmentalized their organization, data from production report of manufacturing process to know what was the variance in their process and how well they managed their inventory. The total employee population of the research was consisted of all Diethehn employees in both head quarter of Pharmaceutical division and manufacturing part. The total population is 200, which excluded the sales representatives of medical product. To do this research, the researcher exclude sales representative and operational staff both distribution center and production line at OLIC Bangpa-In as population for this research because of firstly; major focus of this research is middle-to-top managements' ideas within the organization. Finally, most of them were temporary employees, in other word part time employees. They did not conform and involved much to the whole organization in term of organization participation and contribution.

Because the research company was large thus the specific sample group, middle-to-top management was specifically selected. Determining sample size is a very important issue because too large samples restricted time constraint, limited resources, fund and the human resources, while too small samples lead to inaccurate results and limited explanation. In many cases, we can easily determine the minimum sample size needed to participate in process. (E. Diletti, 1991, p.29) From within the organization those who

Page 94
were engaged in the action research the sample group were selected from the total population. The criteria used to select the sample group were a) those deeply involved who knew the business process and b) those whose areas are under their responsibility to realize the positive culture as a result of the change. Of the sample group most were the senior employees within the research company. The sample group consisted of people from Diethelm Asia Pacific, Diethelm Pharmaceutical division and OLIC (Thailand) Co., Ltd. The target samples are 5 top managements, 10 brand managers, 10 financial and administration directors and product distribution managers and 5 production line managers from OLIC. For more illustration, see Table 3-1 next page.

For Diethelm Asia Pacific regional office, there are 2 top executives and 1 financial director in this office therefore 100 percent sample size determination for this group can be directly specified. For Diethelm Pharmaceutical division, the researcher determined the sample size from total population 30 people. According to medical research paper in England, the appropriate sample size to collect the data should not below 30 percent when compared to the total population. (T. Seed, 2000, p. 23) This sample size is also neither too large nor too small for organization in developing country like Thailand. Therefore, the researcher tried to control the sample size which should not lower than 30 percent when compare to total population for data accuracy result. Two top executives were selected from three executives of Diethelm Pharmaceutical division. Even though, there are 20 brand managers at Diethelm but the researcher selected only 8 brand managers according to their seniority, in-dept knowledge in their area of responsible and willingness to adapt change. For accounting and distribution center, 5 executive directors from these areas were selected as sample group.
There was slightly different criteria to select the sample group for OLIC because total population at OLIC is smaller than Diethelm Pharmaceutical division. Only one top executive and 2 brand managers were selected. For accounting and distribution center, 4 managers were selected as a sample group. Because OLIC 's major function is manufacturing therefore 5 managers from production line were also selected as sample group.

Table 3-1: Purposive sample

<table>
<thead>
<tr>
<th>Sample group</th>
<th>Diethelm Asia office</th>
<th>Diethelm Pharmaceutical division</th>
<th>Olic (Thailand) Co.,Ltd.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top executives</td>
<td>Total(%) 2(100)</td>
<td>Total(%) 3(100)</td>
<td>Total(%) 3(100)</td>
</tr>
<tr>
<td></td>
<td>Sample(%) 2(100)</td>
<td>Sample(%) 2(66)</td>
<td>Sample(%) 1(33)</td>
</tr>
<tr>
<td>Brand manager</td>
<td>-</td>
<td>20(100)</td>
<td>5(100)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sample(%) 8(40)</td>
<td>Sample(%) 2(40)</td>
</tr>
<tr>
<td>Financial and Administration</td>
<td>1(100)</td>
<td>6(100)</td>
<td>5(100)</td>
</tr>
<tr>
<td>manager</td>
<td>Sample(%) 1(100)</td>
<td>Sample(%) 3(50)</td>
<td>Sample(%) 2(40)</td>
</tr>
<tr>
<td>Distribution center manager</td>
<td>-</td>
<td>5(100)</td>
<td>5(100)</td>
</tr>
<tr>
<td>Production manager</td>
<td>-</td>
<td>2(40)</td>
<td>2(40)</td>
</tr>
<tr>
<td>Total</td>
<td>3(100)</td>
<td>15(44)</td>
<td>26(100)</td>
</tr>
<tr>
<td></td>
<td>3(100)</td>
<td></td>
<td>12(46)</td>
</tr>
</tbody>
</table>

The reason of sampling all management was to get the viewpoint of how they departmentalized their organization, how they performed the managerial function that affect the supply chain process and how they managed the uncertainty situation that
effects on the whole process of supply chain. For brand manager, distribution center and administration staff, the researcher wanted to study whether they understand what their major role in the supply chain was and what they exactly do in the current situation, how well they managed the organization inventory, what was the major control system that they used to measure the effectiveness of their own responded process performance.

Furthermore, the researcher needed to collect the data about their idea whether organization culture and management decision affect on their performance and satisfaction. The reason of sampling production and warehouse control staff at manufacturing site was to assess each staff performance to control the inventory level and how well they minimized the production variance through the site visit and survey and also focus on another data flow of the manufacturing process that effect from the inventory control in term of minimized stock level, just in time picking process, cost reduction and total quality management. Also, the researcher collected the data from questionnaire, interview, and observation in order to know the feedback of organization culture, structure, job role and managerial function. Secondary sources of data were very important to measure some variables in logistic supply chain and also take into consideration throughout this research.

**The Instruments**

For this research, data collection technique that widely used was focused group interview because these research variables are mostly focus on qualitative rather than quantitative. However, questionnaire was one of another data collection techniques that used to support the data that gather from interview.

The following instruments were used to gather data: 1) **Questionnaires** — to gather the perception of respondents regarding organization culture, organization
structure, job role and managerial function related. All questionnaires were newly developed and were reviewed by the experts or any third parties so the pilot test were set up for a group of 10 persons before perform pre-ODI phase. 2) **Interview guide** – which focus on group interview and management meeting use to gather the information of the respondents which mostly focus on organizational process related regarding critical supply chain process, risk management and total quality management process and also use to enhance information gathered through questionnaire. Most of the interview questions were gathered from the approved sources and already been proved by most consultants during the previous project implementation. 3) **Observation** used to assess the additional information in term that cannot easily get through the normal interview process like organizational culture by observing the activity of the organization member during informal talking 4) **Checklist** – to have excess to documents needed for the study like organization chart, employee job description, inventory balance, production report, total quality management like ISO or GMP documentation, company policies towards critical business process.

**Data Collection**

Data were collected through the various sources; observation, questionnaire, and interview. All questionnaires were conduct only in English because the company is multinational firm that consist of people from different countries. Everyone in the organization can read English. Since the researcher was a consultant of the researched company, the researcher is a participant observer that is easy to collect data in the ways of observation method and interview. Moreover, the researcher was one of the project management team who closely coordinates with top management, so it was convenient to
set the interview appointment with top and middle managements and able to get the very insight information from the company.

Other data were collected from archival source like the existing organization chart, job description, company policy, and other sources that are related to the study.

The existing inventory balance report, production report and profit and loss statement after each business year helped to assess the whole supply chain’s performance. Observation was another method that can be useful source to be used together with other sources in data measurement or assessment. Questionnaire was the most popular method to be used in data collection, because the result could be measured in quantitative terms. Eventually, the interview was still to be used along with observation to gather the information that cannot gather by questionnaire and also use to supplement the questionnaire and observation. It can be an effective way of data collection, because it was interactive or two-ways communications and the immediate answer can be obtained. The body languages could also be observed during interview, but it takes a lot of time. This interview method specified in some area of problems that the researched to identify specifically in the process.

The data collection started as soon as possible after proposal presentation. The data collection plan used the guideline from research methodology. For phase 1, until now, the researcher is in the step 3 of the pre-ODI: business process analysis. For the permission, although the researcher is the official consultant for the researched company that could easy access through the data. However, it looked nice when the researcher had the permission letter to inform the management of the researched organization. Data collection started with the interview session with key respondent and questionnaire were used to strengthen the interview session. These were conducted during May until end of
June, 2002, however, some part of secondary data collection/review and some interview sessions were informally conduct with some group of respondents. After that OD implementation phase were started on July until September 2002. Final phase for post-ODI were conducted on the whole month of October. These were the draft research plan for this action research.

**Data Analysis Procedure**

Data collected by using questionnaires for quantitative results were analyzed by the statistical analysis like Statistical Package for Social Sciences (SPSS). It made use of Paired Sample T Test to analyze the effect of organization development intervention on most of the variables that affect logistic supply chain.

Other data collected by interview, other sources as customer survey, production report, and company policies were used to enhance the result of the quantitative analysis.

However, for some variables like organization culture the data could not easily be analyzed by using quantitative analysis on any tangible results generated within the research timeframe. So qualitative analysis was taken into account. In qualitative research, the distinction between data collection and data analysis might not be clear-cut as it is interwoven in the cyclic or iterative process of problem-identification, idea generation of solution based on the identified problem and solution-implementation through the ODI. As a series of interview progresses, the researcher was often creating, testing and modifying analytic categories as an iterative process.

Moreover, another analysis procedure was used with the various systematic approaches for analyzing recorded talk. This data analysis called conversation analysis that mostly applies to gather data by conduct an interview session. This was an approach for the analysis and description of naturally occurring talk and would illustrate the
approach from the research into boardroom talk. Traditional conversation analysis focused has been upon turn taking where there was an insistence upon examining immediate adjacent ordering of the talk. Another qualitative analysis used in the research was observational process. However, observational approaches needed to provide for the periodic examination, and indeed interrogation, of the assumption being made.

To analyze data collection in term of qualitative such as organization culture, statistical analysis tools for qualitative analysis like Atlas TI from Sage Publication might be used to analyze this data.

**Propose OD intervention**

- Cultural change was used in this research to emerge change in the organization culture of Research Company. The organization culture change as a whole was slightly carries out because the Research Company is the big organization.

- Structural design was used in this research for redesigning the current organization structure to become more flexible and minimize redundancy. This change program concerns the organization’s division of labor in term of how to specialize task performances. Every member form every department within the organization participated in the design of the new organization structure. The new organization structure had to get the agreement with the top executive and fix the date to start implement the new organization structure. Not only the researcher but also the consultants for another functional area participated in design the new organization structure.

- Work redesign that also called job redesign was used in this research for redefining the new job description for each employee. The reason to do this is to minimize the job redundancy within the organization, which can rise to obstruction in business process. Job rotation was used to increase the specialty of each member and
reduce the redundancy in his or her job description. However the current job description should be revised to map with the new job functionality. Also this intervention needs management approval before implementation.

- Enterprise resource planning was one of information technology intervention also used to streamline the whole supply chain process. ERP was the application software that can be applied in every functional area throughout the supply chain. The reason to implement ERP was to reduce cost in the long run, receive up-to-date information (online and real time data) for decision making and also increase accuracy and minimize error in the whole process of supply chain which in this research specific to inventory management. SAP R/3, ERP/SCM application software, was introduced and implementation for the researched company for streamline the inventory control process. Because ERP was the integrated software, another functional consultants have to work together with the researcher to implement this software.

- Supply chain management was another information technology intervention that will be used to facilitate the logistic supply chain. Unlike ERP, SCM mostly focus on how to manage supply chain to maximize productivity, increase profitability and increase customer satisfaction. SCM focused in this research also in the part of inventory management. SAP R/3 can be used as the SCM application software to facilitate the whole supply chain because the concept of the ERP was not only specific for any area but expand to the whole process of logistical supply chain. The same like ERP, several functional consultants have to participate in design the new system.

- Open system planning (one of strategic intervention) also was used in this research which actually correspond with goal setting theory to minimize the risk that cause form uncertainty situation. Everybody known that pharmaceutical market is deal
with many parties. It's also a high-risk industry specific because it relate to human life. There are many parties that relate to this business like government agency (Foods and Drugs Association - FDA) and medical principal. So how to plan to minimize the risk helped management to forecast and predict the future fast changing environment and issued the company plan to cope with them. This intervention was used to implement together with MBO to increase the correctness of the management decision-making under uncertainty situation. Mostly focus on increase the effectiveness of current risk management system. In this intervention, top management must pay more attention to this when compare to the other intervention.

- Employee involvement – Quality circle and empowerment also be used to maximize the last research variable-total quality management process which already been used in the research's company. These instruments increased and streamlined the whole TQM process, however in this research it focused only in the inventory control and related processes. These tools increased the employee involvement throughout the supply chain process and perform tightly quality improvement in every process. Rewards system for TQM was based on process-oriented which different from traditional rewards system. Probably, the new quality circle has to be revised to fit with the current situation. The people assigned to become the member of the circle came from different department and gave them the autonomy to conduct their work. Management also agreed with this implementation and provided a support in term of financial support and general support.

All mention above were the OD interventions, which initially plan to be used in this research and already done now.
Reliability test result of the Survey Questionnaire

Following is the reliability test result for my questionnaire, which categorized according to the thesis variable. The sample size used for reliability test is equal to 10 people, which select from the whole sample size. The sample size was categorized by gender, age, educational level, job position and job experience. The methods that used to perform reliability test was frequency analysis and reliability analysis by using alpha scale and covariance inter-items. If the alpha value was not equal to zero that meant the questionnaire was reliable. The results are as follow,

Frequency Analysis Result

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>Male</td>
<td>6</td>
<td>60.0</td>
<td>60.0</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>4</td>
<td>40.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>10</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>Below 25</td>
<td>1</td>
<td>10.0</td>
<td>10.0</td>
</tr>
<tr>
<td></td>
<td>25 to 35</td>
<td>3</td>
<td>30.0</td>
<td>40.0</td>
</tr>
<tr>
<td></td>
<td>36 to 45</td>
<td>4</td>
<td>40.0</td>
<td>80.0</td>
</tr>
<tr>
<td></td>
<td>Above 45</td>
<td>2</td>
<td>20.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>10</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Educational Level</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>Below Bachelor Degree</td>
<td>1</td>
<td>10.0</td>
<td>10.0</td>
</tr>
<tr>
<td></td>
<td>Bachelor Degree</td>
<td>3</td>
<td>30.0</td>
<td>30.0</td>
</tr>
<tr>
<td></td>
<td>Master Degree</td>
<td>6</td>
<td>60.0</td>
<td>60.0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>10</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>
### Job Position

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal staff</td>
<td>3</td>
<td>30.0</td>
<td>30.0</td>
<td>30.0</td>
</tr>
<tr>
<td>First line supervisor</td>
<td>1</td>
<td>10.0</td>
<td>10.0</td>
<td>40.0</td>
</tr>
<tr>
<td>Middle management</td>
<td>3</td>
<td>30.0</td>
<td>30.0</td>
<td>70.0</td>
</tr>
<tr>
<td>Top management</td>
<td>3</td>
<td>30.0</td>
<td>30.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

### Job Experience

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
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<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 2 years</td>
<td>3</td>
<td>30.0</td>
<td>30.0</td>
<td>30.0</td>
</tr>
<tr>
<td>2 to 5 years</td>
<td>2</td>
<td>20.0</td>
<td>20.0</td>
<td>50.0</td>
</tr>
<tr>
<td>6 to 10 years</td>
<td>3</td>
<td>30.0</td>
<td>30.0</td>
<td>80.0</td>
</tr>
<tr>
<td>More than 10 years</td>
<td>2</td>
<td>20.0</td>
<td>20.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

*Organization culture*

Reliability Coefficients: 8 items

Alpha = .8145

Standardized item alpha = .7869

The alpha value is not equal to zero mean this group of questionnaire is reliable.

*Organization structure*

Reliability Coefficients: 7 items

Alpha = .8134

Standardized item alpha = .8411

The alpha value is not equal to zero mean this group of questionnaire is reliable.

*Job Role*

Reliability Coefficients: 8 items

Alpha = .4318

Standardized item alpha = .5484

The alpha value is not equal to zero mean this group of questionnaire is reliable.

*Inventory Management*

Reliability Coefficients: 7 items
Alpha = .6722       Standardized item alpha = .6506

The alpha value is not equal to zero mean this group of questionnaire is reliable.

**Managerial Function**

Reliability Coefficients 9 items

Alpha = -2.1616       Standardized item alpha = -1.4836

The alpha value is not equal to zero mean this group of questionnaire is reliable even though the alpha value is negative.

**Risk Management**

Reliability Coefficients 5 items

Alpha = .6705       Standardized item alpha = .6537

The alpha value is not equal to zero mean this group of questionnaire is reliable.

**Total Quality Management**

Reliability Coefficients 8 items

Alpha = .6181       Standardized item alpha = .5051

The alpha value is not equal to zero mean this group of questionnaire is reliable.
CHAPTER 4

RESEARCH FINDINGS AND ANALYSIS

4.1 Introduction

This chapter contains the information that the researcher collected from several sources like data from questionnaire, interviewing summarization and collected secondary data. This chapter follows research framework and sequenced according to research design that already described in the previous chapter. These findings were collected through focused group interviews with the target respondent. The role of the researcher was that of the team leader conducting these interview sessions. Additional data came from questionnaires distributed to target group and from the observation by researcher team.

4.2 Action Research Framework

4.2.1 Research preparation

The first step according to the research design was to find out would be the respondents and target group for the group interviews. Because the researcher is a consultant to the research company he could easily arrange the interview sessions and issue questionnaires to the target respondents. The research respondents included the top executive from Diethelm-Keller Asia Pacific regional office, commercial and logistics manager from Diethelm Pharmaceutical Division, Supply chain Director from OLIC (Thailand) Ltd. Also included are middle level management like the Executive Brand Manager who is responsible for each product, the Warehouse manager who is responsible for product distribution, the Supply chain manager who is responsible for manufacturing
at OLIC. Interview sessions were also held with the Financial and accounting manager for related topics, and the First line supervisor and staff, in order to increase the level of data accuracy.

Because the scope of this research is very big, the research consultant’s teammates were invited to help the researcher to conduct the research with specific guidance and instructions to fulfill the objectives of the action research and the study. The help from the researcher teammates was very important because the different locations of the target organization meant that the researcher could not complete the whole organization project implementation within the required time.

4.2.2 Feasibility study of the research

Before conducting the research, the researcher prepared a feasibility study report and submitted it in the form of a proposal to Diethelm management to get their approval to conduct the research. During this phase the researcher spend a lot of time to prepare the research proposal to submit to the project management.

Following are the important details that were included in the feasibility study and research proposal that was submit to the target organization management.

" The Diethelm Group in Thailand has a long history of tradition and success; in only 5 years the Diethelm Group will celebrate its 100th years in Thailand. In this century Diethelm advanced to become the country’s leading healthcare distributor representing 5 of the world’s top 10 pharmaceutical and healthcare companies. Diethelm is a well-known brand name and a synonym for accuracy, quality, service and reliability.
Today, the Diethelm Group of Companies is a successful Multinational Corporation offering various services e.g. warehousing, distribution, collections, marketing, contract manufacturing, importation, regulatory services, legal advice and human resource management.

The services include the subsequent business lines:

- Healthcare Services
- Consumer products
- Food/Special Products
- Engineering/Technology
- Diethelm Travel
- Property division

In order to consolidate their market position and to expand their market share Diethelm’s management is aware, that they have to replace the various stand-alone, in-house systems with an integrated and sophisticated back office. The researcher has conducted an assessment of Diethelm Thailand’s organization structure and business processes in April 2002. Subsequently the researcher has participated in further studies of Diethelm’s requirements in Singapore, Malaysia and the Philippines and accompanied Diethelm’s evaluation of several business solutions that related to increasing the efficiency of their supply chain.

Based on this experience, the researcher saw the need to attend to at least the following areas:

- Finance and Controlling
- Sales and Marketing
• Sales Order Processing
• Credit Control and Collection
• Logistics
• Manufacturing for OLIC
• Change management

In the business evaluation process Diethelm decided that a full scale change management and ERP implementation would be the best solution to meet today’s customers’ demands for more accurate, detailed and real-time reports and data. The chosen SCM fulfilled these requirements and as part of the ERP package made Diethelm ready for future technology deployment e.g. B2B Procurement, Supply Chain Management and Customer Relationship Management, which will be essential in order to remain Thailand’s number 1 healthcare distributor.

A possible regional framework for this implementation is discussed later in this research paper. Therefore, this research paper focuses on the local solution such as organization restructuring and enterprise resource planning for Diethelm Pharmaceutical and OLIC in Thailand.

However, the proposed implementation strategy leaves open the possibility of a future single integrated solution for the whole Diethelm Group in Thailand and Asia.

The upcoming OD and ERP implementation for Diethelm is a challenging task with a deep impact on Diethelm’s business processes and requires the right consulting partner.
4.2.3 Business process review

Based on the interviews with the management and key target users, the results are summarized in the following section. These results are the major part of the pre-organization development phase, referred to as the business case analysis and review.

I. Organizational related:

1. Organization culture

This session describes about organization culture within Diethelm and OLIC. Most of the data are collected from interview session and observation by researcher team.

Based on the interviews and some information from questionnaire, the researcher found that the culture of Diethelm is quite independent among several divisions. The culture of Diethelm did not support co-operative culture as were illustrated from business process review document mention that even the transfer of goods from one division to another division still charge the management fee to another division. Every division tried to compete with another division to generate more profit than another division. The Chief Executive Officer was the important person who generate this organization culture because the CEO motivate their subordinate to generate the profit to the company by increase the competitive climate for their organization.

Although in the same division, the cultures in Diethelm pharmaceutical division also did not support co-operative work. Different department try to work separately and ignore the effect from their work to another department. One example from the researcher’s observation was the warehouse manager was not reluctant to join the project team. The warehouse manager also rejected to share their idea about
the warehousing process that because the organization culture did not support their staff to understand the benefit of the whole company. Every department in pharmaceutical division was work only for generating benefit for their own but did not care about the benefit that the whole company will get.

**Research concern/Proposed Recommendation**

So the researcher can summarize from interview session with sample group that the major organization culture of Diethelm is increased organization profitability by generate competitive environment. This culture is not good for the whole organization for some management’s point of view because they increase the competitiveness between people within the same organization. This culture also happens during pre-OD process and if these happen during the OD implementation. It will obstruct the whole implementation process that lead to minimize the benefit that the whole organization got. So the first thing that the researcher had to do during OD implementation was to eliminate or minimize this destructive organization culture.

2. Organization structure

In this session, the researcher described about Diethelm and OLIC organization structure in term of how people communicate through the rest and also the chain of command. Most of the information from this session was gathered from questionnaire and interview session.

Currently Diethelm have only one plant and their organization structure is using the concept of product differentiation. So the organization is product departmentalisation, one brand manager work as the head for each department. Every organization support functions like accounting, information technology except warehousing function are disseminated to support each product line. This quite
different for OLIC that manages two separate locations, Bang-Pa In and Bang Chak. In order to keep the organizational structure simple the researcher propose to manage both locations in one plant. That mean every policy or company procedure should effect for both location. Unlike the current situation that some policy effects the employee only for manufacturing part, and does not effect to staff on the head office. This was possible because the business process is quite different for both places. But this can cause the staff from one site feel that they do not treat as the same by company management when compare to staff in another location. Same situation, in Diethelm Pharmaceutical Division (PHD) has no central purchasing department. This is quite strange for big organization like Diethelm. The researcher recommends that PHD should establish a central purchasing department to handle the procurement within PHD.

*Research concerns/Proposed Recommendation:*

The organization structure is quite decentralized that influence by organization climate. The setup organization structure couldn’t be easily finalized. One concern is about product differentiation by each brand manager especially for sales goods. Even functional departmentalization is the best organization structure and the best span of control but it might not fully 100 percents match to Diethelm business process. The evidence that the functional departmentalization is better than product departmentalization because generally this kind of departmentalization group the organization according to their function then each department can perform the work better because the high cohesiveness in their department. But probably this might not true for Diethelm because their product line categorizes the core of the organization structure
Currently, there was no central purchasing department in PHD. The researcher proposed a central purchasing department for PHD. The reason to establish the central purchasing department is because this will optimize the procurement process in the future. If the organization have central purchasing department, there is only one contact point for their supplier and will maximize the price negotiation and vendor evaluation process. The major responsible for purchasing department is to receive purchase request from brand manager or any staff and convert them to purchase order and send them to principal or supplier. This unit within the organization streamlines the business flow of the whole supply chain.

3. Job role

This session described the job role for each position within Diethelm and OLIC. Most of the data were collected from interview and secondary source of data like current job description.

Job role in Diethelm and OLIC was found confusing to some organization unit. Separately speaking, for PHD brand manager is the one who can process every transaction that relates to the trading process. Brand manager was the one who performed the planning function together with the purchasing function (this happen because PHD do not have central purchasing department). This was found not good for the whole logistics flow because brand manager’s major responsibility have to do with performing the sale transaction to generate profit to the whole organization.

This situation also happened at OLIC but more critical in term of business process control. Supply chain department was the main department, which perform the invoicing function to their customer. This is incorrect in the term of goods logistical
process, supply chain manager response only how to plan and purchase the raw material to streamline the whole organization manufacturing process.

Research concern/Proposed Recommendation

Most of the confused job role cause from unclear organization structure and lack of management to make the decision about management policy that relate to how to change and how to improve the current job role and job description in the organization. The recommendation that the management have already agreed is to restructuring the organization revised some job description and performs job rotation for some position within the organization.

4. Inventory control process

The following section describes about current material management and inventory control process from group interview session and the researcher observation. The process started from planning, procurement and then inventory management process;

Material requirement planning

The raw material controller plans the raw and packaging material according to OLIC’s production plan. This calculation is done manually on spreadsheets application software like Microsoft Excel. PHD only purchases raw materials that OLIC does not provide.

However, process for sales goods planning are quite same as OLIC. Principal plan his or her own stock in case of zero stock (This word “zero stock” is represented the stock consignment in sense of Diethelm and OLIC). But in case of PHD stock, sales forecast and sales history are used as information to support planning function.

Research concerns/Proposed Recommendation:
Diethelm wants OLIC to be the one to run the MRP generating the purchase requisitions for PHD, so PHD can use these purchase requisitions to issue purchase orders. The goods receipt will be at OLIC and OLIC sent the invoice to PHD. For sales goods, reorder point planning and material forecast are used for better planning. This is also the researcher’s recommendation regarding material requirement planning.

**Procurement process**

**PHD stock**

The brand managers used the sales history of the last 3 months and the sales forecast for the next 3 months as base to determine requirements. By comparing these values with the current stock level, they obtain the purchase order quantity.

The commercial manager is authorized to approve the request and to make some modifications in terms of order quantity, delivery costs, special conditions, prices, payment terms and delivery dates. The brand managers have to attach the sales history of the last 3 months and the forecast for the next 3 months to the purchase requisition. If the commercial manager does not approve, the purchase requisition is returned to the brand manager to make some changes.

If the commercial manager approved the purchase requisition, the brand manager will issue and print the purchase order and fax or e-mail it to the principal.

**Research concerns/Proposed Recommendation:**

In standard Enterprise Resource Planning (ERP) application software forecast and MRP functions will automatically generate purchase requisitions of appropriate quantity, if a material shortage has been detected. The brand manager can update the purchase requisition regarding delivery date and quantity. Then the commercial
manager has to approve the purchase requisition using electronic approval process. In the case of approval, the newly created central purchasing department as was committed to establish according to the management policy meeting will issue a purchase order with reference to the purchase requisition. In the future, delivery costs should be planned and already entered at the time of purchase order maintenance. The purchase order is printed and sent to the principal. ERP software tracks the purchase order status during the procurement process. These would maximize the Diethelm procurement process flow in the future.

Zero stock (Vendor consignment stock)

The principals are fully responsible for the replenishment process of their stocks; PHD doesn’t issue a purchase order. However, some principals will tell PHD when and how much they will deliver. The principals are planning and controlling their own stocks by looking into the logistics application software called UBIS. UBIS is application software that runs on IBM AS/400 machine. The main function is to control all logistical process that related to trading function like inventory management, sales order processing and invoicing process. Principals can also track movements for both, normal and sample goods.

When a principal sends goods to the Distribution Center (that will be called as DC throughout the rest of this research), the DC checks the quantity against the delivery order from the principal and enters the arrival notice in Warehouse Management System.

Research concerns/Proposed Recommendation:

In standard ERP a goods receipt without purchase order to vendor consignment stock will be posted. Such a goods receipt updates the stock quantity, but no any
booking in accounting document, because the principal still owns these goods. The purchase info records should include the pricing conditions of the zero stock material in order to allow PHD to perform the consignment settlement.

**General requirements that relate to inventory management:**

- The brand managers want to know principal stocks in order to minimize back orders.

- The brand managers would like to have a report for pending purchase orders showing the open delivery quantity.

- The procurement staff wants that the system automatically calculate the delivery date using the replenishment lead-time for each purchase order. Therefore, all three values (Purchase requisition processing time, delivery time and goods receipt processing time) must be maintained in the material master of each material.

If there is a pending purchase order and PHD issues a new purchase order for this item, the principal may send the goods in the lump sum by combining the order quantities of the pending purchase order with the new purchase order. The brand managers need the system to manage this case by a setting over-delivery tolerance limit for each purchase order. ERP software like SAP offers a wide spectrum of tolerance, which can be all individually determined.

*Inventory management process at distribution center*

*Goods arrival process*

DC103, DC 101/2

First, the incoming goods are weighted. Depending on the packaging, the warehouse clerk chooses one packing unit and weighs it. The warehouse management
system notes the weight and this value is taken as standard at each good receipt time for all the other units of this product. If the weights are within a certain tolerance, the goods are accepted and transferred to the central storage area for bulk material. Medical supply is stored in the medical supply area and temperature sensitive goods, which need cooling, are stored in the cooling storage area. If the weight difference is more than the tolerance, the stock keeper will unpack and physical count that material. Goods receipt information such as product name, product code, manufacturer batch number, manufacturing date, expiration date, arrival date, storage bin and stock type is entered into the warehouse management system and the arrival notice (A/N) document is created. The goods receipt data in the warehouse management system are transferred into UBIS every 3 minutes. Usually, the incoming product is assigned to two stock types: R for regular stock (either Diethelm or zero stock) and B for buffer stock. Buffer stock is supplier stock. If PHD wants to sell buffer stock, they have to issue a purchase order first and transfer the goods to PHD stock before selling it. Then the supplier sends the invoice. The assigned storage bins are temporary, which are overwritten when the exact bin location is known. All received goods come with a certificate of analysis (COA) that is scanned in the warehouse management system. The Foods and Drugs Association (FDA) controls Goods under the FDA regulation. Therefore, samples are withdrawn at the goods receipt and the stock slightly decreases. This section was described about inventory control process flow at distribution center; however, some processes have to be predetermined to streamline the whole process flow for implementing ERP software.

Research concerns/Proposed Recommendation:
• The interface between the current warehouse management system and ERP is the most important concern of inventory management. At the goods receipt the A/N document is issued from the warehouse management system. This information (such as product name, product code, batch, manufacturing date, expire date) is transferred from warehouse management to UBIS system every 3 minutes. For the future it must be decided, if this goods receipt is posted in ERP or warehouse management system first and how both system are synchronized.

DC 280

All incoming goods of warehouse 280 arrive with an attached purchase order. At the goods receipt the quantity is checked against the purchase order quantity. If the quantity is less than the purchase order quantity, the goods receipt is accepted and a subsequent delivery is expected. The goods receipt information such as product name; arrival date, batch and expiration date is entered in the UBIS system. The quantity of imported goods is checked by pack size (carton) at the time of arrival. The counted quantity is transferred in the base unit of measure for imported goods and entered in the legacy system later. In warehouse 280, the location of goods is not classified into bin details in the legacy system. Goods of different suppliers are stored in different rooms.

DC 281

All goods in warehouse 281 are zero balance stock. The goods stored in warehouse 281 can be divided into 2 main groups: Dent sply and B-Braund (principal’s name) goods. The quantity of all incoming goods is checked against the delivery order (DO). If the quantity of B-Braund goods is less than the quantity specified in the DO, B-Braund requests Diethelm to first enter the DO quantity into the system and then use
another transaction to transfer the difference amount of goods back to B-Bound. If the quantity is more than the quantity specified in the DO, B-Bound requests Diethelm to enter the delivered quantity. For other dental supply goods, the delivered quantity is entered into the system. Besides the quantity, other goods receipt information such as product name, arrival date, batch, expiration date and storage bin are entered in the warehouse management A/N screen.

This information is not yet entered into legacy system. When the clerk finished entering the data, he saves the information and prints it at DC103. DC103 faxes the hardcopy of the A/N document to the warehouse 281 clerks to check the accuracy of information. When the correction is finished, the A/N information will be synchronized between the warehouse management and UBIS system.

**Research concerns/Proposed Recommendation:**

There will be no interface with the warehouse management system for the warehouses 280. All good movements are entered in the new ERP system. Storage bins are maintained in ERP. For the warehouse 281 the decision is still pending.

*Goods delivery process*

**DC103, DC 101/2**

Invoices for sales orders entered in the legacy system at Diethelm Pharmaceutical division, New Road, or at OLIC are sent to DC 103 and trigger the picking process. The invoice comes through the warehouse management system, which determines and calculates the exact picking location and package size.

There are four different picking areas: bulk area, picking area M, Medical supply and cooling storage. Picking area M is replenished from the bulk storage area. Warehouse management controls the replenishment process. A minimum stock and
reports about the replenishment process (refill to maximum level) exist. However, there are some cases (for example slow moving or bulk sales unit pack) where goods are picked directly from the bulk area. Goods needing cooling are picked in the cooling storage location. They are packed together with ice pack to keep them cool.

The picking tag is printed from warehouse management with barcode, picking points, material to be picked and picking quantity. In picking area M, a worker puts the picking tag into the package of the size determined by warehouse management. The still empty package runs on the conveyor, which has 6 picking points. At each check point the bar code is checked whether the goods stored at this picking point are ordered. If yes, a worker puts them in the package, if not, the conveyor transports the package to the next picking point. At the last picking point the quantity part of the picking list is pulled off and sent to the bench check location. There, at the bench check, the goods are recounted and the count result is entered in the warehouse management system. If the count differs from the original picking list, the package is sent back for picking again.

In case, there is a shortage of some goods to be picked, the particular delivery is put on hold. The New Road office is informed and they cancel the invoice. A new invoice is printed with the available amount. Then the picking process is performed again. OLIC and Pharmaceutical have different picking areas and different delivery schedules.

After the picking process, the picked goods that come from different picking locations are rechecked, sorted according to individual invoices and weighted again at the despatching section. Finally, the goods and invoice are loaded into vans. When the customer receives the goods, he signs the goods receipt document and the van driver
returns it. These are data are entered in the warehouse management system first and send to UBIS system later.

Research concerns/Proposed Recommendation:

- The existing picking process is obviously a pre-invoice procedure. The goods are picked according to the invoice. A proposed alternative is the post-invoice procedure that confirmed picking has to be performed before issuing invoices probably the better solution for goods delivery. In this case the picking of goods is triggered by the sales/delivery order. With the post-invoice scheme, the actual amount of the goods, and the exact batch picked are recorded after the picking.

- For the pre-invoice scheme, ERP simply replace the legacy system. The interface to WM remains as it is. ERP send the list of the goods to be picked for each invoice as a flat file to warehouse management system. The goods issue process is already confirmed in ERP before the file is sent. Like in the legacy system, invoices are still sent to DC103 to print and warehouse management facilitate the rest of the picking process in the warehouse. If the goods can’t be picked, the goods issue has to be reversed and the invoice has to be cancelled. With this scheme, the current problem of wrong batch picking and the cumbersome process of canceling and reprinting the invoice and picking document in the cases of shortages are not diminished. To minimize this back order, the post-invoicing process was proposed as the alternative for delivery process at DC.

- For the post-invoice procedure, after a long discussion with commercial manager and warehouse supervisor a new interface between ERP and warehouse management system had to be designed and the goods issue/picking process at the distribution center (DC) had to be re-organized. More or less, this might be effected the current
physical layout of the distribution center. The new business process is triggered from ERP by sending sales/delivery order details (product name, quantity and batch) to warehouse management system. Warehouse management system identify the available quantity of the batch and the bin locations to be picked. When the picking is done, the actual quantity and batch is confirmed in either warehouse management system or ERP. Then both systems are synchronized. After the picking information is entered into ERP, the goods issue can be confirmed and the invoice can be printed. With this post-invoice scheme, the business process of picking at DC will be dramatically changed. All confirmed picking data from the warehouse management system are transferred to ERP. This is important to post the correct goods issue to the corresponding delivery document in ERP. The invoice is printed later after the goods issue has been posted.

DC 280

The picking process in warehouse 280 is slightly different from DC103, because warehouse management is not used here and also the goods in 280 have no bin location recorded in the system. Twice a day (morning and afternoon), the invoices and the summary list of the goods to be picked will be printed from the legacy system. The batches are not specified in the summary list because most customer do not concern about the matching of the batch specified in the invoice and the batch of the delivered goods. The warehouse officer will pick the goods, which are listed as bulk in the summary list. The picked goods are then sorted into each invoice, checked and weighted in the dispatching section and loaded to the scooter for Bangkok customers or loaded to the van to assemble with the goods at DC103 for upcountry customers. Like in DC103, the goods issue is already confirmed in the
legacy system at the time of invoice printing. If the goods cannot be picked, the invoice is cancelled and then reprinted with the available batch and quantity. So the post-invoicing process had to be implemented here because no any external factor issue like the current warehouse management system at DC103.

DC 281

The picking process in warehouse 281 is similar to DC103. The invoice is printed from the legacy system. The picking summary list is printed from the warehouse management system, which identifies the batch and bin location. The process of cancellation and reprinting of invoices in cases of shortage are analogous to DC 103.

Goods return process

There are two main reasons for goods returns:

- Customers refuse to receive the delivered goods at the time they are sent
- Customers return the goods return after they accepted them.

In the first case the goods returns take place at DC. All returned goods are kept in the goods return area where the goods are checked and separated into the sellable and un-sellable goods. In the second case the goods returns come to New Road office first for issuing the credit notes in the legacy system and are then returned to the original warehouses. The ownership of the sellable goods remains the same (own stock or zero stock). Only with some principals it has been agreed that the returned goods, which were zero balance goods will now belong to Diethelm.

Research concerns/Proposed Recommendation:
The stock control type – 'blocked stock' can be used to indicate the status of the goods return not yet checked. The sellable goods are un-restricted to use stock. The business process of un-sellable goods has to be the designed. Brand manager and warehouse manager have to participate in redesign this process. Good returns should always be posted with a reference to the related sales order.

II. Management related:

1. Managerial function

In this section of the report, the researcher presents the managerial functions of the Diethelm and OLIC. For Diethelm, included in every level of the organization from first line supervisor up to top management. This includes the major managerial function for each level of Diethelm staff in the following session,

Planning function, most of Diethelm major policy is initiated from top management like CEO or General management from each division. Every major or important company policy has to be approved from top management first. Middle management doesn’t have the authorization to issue any policy to their subordinate without approval from top management. Some major company plan is issue by CEO only; CEO of Diethelm is the one who have the authorization to make the contract with their principal. CEO only conducts every trading agreement and pricing structure for Diethelm. Middle management and first line supervisor have a little involved in the company policy and planning, they only work as the disseminator to distribute the company policy to their subordinate.

Organizing function, every management levels in Diethelm are playing the major role in organizing function. Brand manager who responsible for each product
line will get full authorization for organize his or her own business unit according to their job role. The brand manager will give some budget from the company and have to manage their business unit to generate the profit to the company. Brand manager possess the full authorization to build or arrange their sale team and assign the task for them.

Directing function, when talking about directing function because Diethelm is wide ranges of middle management so each management have their own directing style. The research result illustrate generally that most of them possess the high level in directing function. They motivate their sale team to reach the group goal and the organization goal. Like other trading company, commission is the most widely use by each brand manager to motivate themselves and their sale team. If they sell the high volume of their goods, the commission will increase proportionally. For logistics staff, form interview all of them feel that their manager is fairly treat all of them and they are well motivated. Because the research focuses on the logistics side so the researcher is not mention about the managerial function in the other department like accounting or information technology department.

Controlling, the last managerial function mostly conduct by top management and middle management when evaluate their subordinate. Yearly basic performance evaluations are performing regularly to measure the performance of their subordinates. But this is only one-way performance evaluation; the subordinate does not have a chance to evaluate his or her own supervisor.

Research concern/Proposed recommendation

Most of managerial function held by top executive and the middle management do not have that authorization. This can sometimes slow down the whole business
process due to management the fact that they could not make decision at the time the situation need the immediate decision making because as the researcher saw from the interview that sometimes the company lost some profit because when the CEO goes abroad, the decision could not be made and until the CEO returns.

The recommendation is the managerial functions have to be properly distributed to each level of management. But the authority to make the critical decision is still held at top management level.

2. Risk management

This section described about how Diethelm and OLIC’s management confront with uncertainty in the current business situation. The researcher can summarize from the result of the interview that Diethelm management try to avoid risk instead of manage risk and change them to be the company business weapons. One good example is the information from warehouse manager that he would like to develop the new warehouse management to replace the old one that develop and use at distribution center for more than 10 years. These systems are obsolete and have some error that the current programmer cannot fix it.

When he send this topic to the top management for discuss in the management policy, the management reject this change and told him to continue using the old system because they afraid that the new system cannot work properly and will cause them cannot distribute the goods to their customer on time. These cause the whole organization loose huge amount of money. But the warehouse manager said that the management is worry only for the profit to the company in the short run not in the long run because using the old warehouse management system cause the distribution
center cannot improve the quality of service by delivery goods faster, compare to the competitor who use the new warehouse management system.

**Research concern/Proposed recommendation**

Proper risk management concept have to be introduced to Diethelm management by the expert in this area as soon as possible because goods management have to see the picture of the whole organization in the long run not only in the short term. They have to possess the management capability to translate organizational risk to become business weapon that can compete with their subordinate. Risk management procedure and policy have to be set to cope with the external uncertainty.

**3. Total quality management**

On the Total Quality Management (TQM), the focus is only on the OLIC manufacturing because the target of the TQM concept mostly focuses on production field. From interview, currently OLIC does not implement TQM and tries to implement in the near future. Supply chain manager told the research why they would like to use the TQM. He says that TQM will help the organization to increase their productivity not only on the quantitative term but also in the qualitative term. He believes that after using TQM he can better planning for production process and can increase quality of service to his principal. He also would like to use the concept of “just in time production (JIT)” parallel with TQM.

Right now, OLIC try to promote the concept of TQM by initiate the steering committee which consist of head of every department that related to OLIC manufacturing like managing director, supply chain director, production director, quality control director, financial and accounting director and human resource director. The TQM team also was promote by the steering committee to study about the feasibility study of this
project, the team also consist of senior staff from several department work together to promote TQM to staff in each person’s department.

The TQM began with feasibility study and analyze the current situation before start design the TQM process. Supply chain manager say that the major process that he would like to improve during the TQM implementation is production process. He said that he would use TQM as the guideline of the company. If someone work deviate from the TQM, they have to be warn and probably punish by their boss. However, he said that although TQM will implement at OLIC soon but the TQM teams still did not be trained and guide about TQM concept. Probably this is the OLIC culture that wants to do the good project but do not improve the quality of their staff to fit with the new project implementation.

Research concern/Proposed recommendation

According to TQM concept that focuses in enhancing the production capability in the manufacturing process. Due to interview result, steering committee focused only to how to implement TQM but not try to build the team to implement TQM properly. External environment also effect the implementation of TQM and after implementation the deviation from TQM can also cause from external environment that cannot theoretical predicted. The researcher recommended that TQM concept be included in the training to the implementation team before the project start and external variable have to take into consideration when implement TQM.

Phase II: Logistics organization development

4.2.4 Pre and Post Design (ODI implementation)
For pre and post ODI, the researcher used the following ODI framework to develop the suitable organization development tools for the research organization.

These ODI Framework focus on the major three important components within the organization. The first one is the organizational related factor like organization structure, job role etc. To change this the ODI tools that related to change management have to be applied to improve this component. The second component is focused on the business process of the target organization. To change the business process, ODI tools that group under business reengineering have to be applied to streamline the whole organization business process. The last component that every modern organization should have is the information technology. IT provides the online and real time data to support management decision making in the fast changing environment.

To improve this component, ODI tools like enterprise resource planning were implemented to facilitate the whole IT process. According to the researcher ODI framework, to connect these three components, people, their activities and well documentation play the major role to connect these components together. However, change to organization structure and business process component is not a one-time
process. Actually, it’s a cyclic process that needs to be revised several times and adapt them to cope with the fast changing environment. The following session describe ODI tools that were designed to use within the target organization.

4.2.4.1 Cultural Change

To change destructive organization culture at Diethelm and OLIC, the researcher applied the cultural change model to the organization. This ODI model was shown in the figure 4-2. This tool is grouped under organization & job role according to framework.

![Figure 4-2: Cultural Change Framework](image)

Cultural change started with the management to share their vision with their subordinate in every level in the organization even blue-collar worker. Management also empowers their subordinate to do their job identitically. Management should develop the mutual trust within the organization by decentralize their decision making process and reduce the competitiveness between several division within the organization. Good performances have to be properly reward to avoid the chance to generate the destructive culture by employee dissatisfaction.
4.2.4.2 Structural compression

Another ODI tools that the researcher try to use to improve the organization and job role according to the researcher ODI framework is structural compression. This proposed ODI used to reduce the hierarchical within Diethelm and OLIC. The objective of this ODI is to reorganize the current organization structure from the vertical perspective to become the horizontal organization structure as shown in figure 4-3. To do these, job role for each position within the organization might be affected dramatically. The detail of this model will be more described in the next session.

Figure 4-3 : Organization structural transformation

2.4.3 Supply Chain Management

Excellence supply chain management can decrease inventory and cycle times while significantly increasing on-time deliveries and inventory turns. Taken together, these results can provide companies with greater profits, improved customer service and that ever-elusive competitive advantage. But it takes the right vision, the right strategy and above all, the right software tools for theory to become reality. Not surprisingly, the
supply chain strategies that have been implemented and their results have been as diverse as the electronics industry itself. That why the researcher try to implement these kind of ODI to pharmaceutical supply chain business like Diethelm and OLIC. As shown in figured 4-4, supply chain management is focused on how to streamline the whole business flow of logistics, which start from purchasing until selling, from supplier until customer. To streamline these functions, good inventory flow and information flow play the major role for this success. This tool is categorized under business process reengineering according to the researcher framework.

![Supply chain management framework](image)

Figure 4-4 : Supply chain management framework

4.2.4.4 Enterprise Resource Planning Implementation

To improve the information technology part according to the researcher ODI framework, enterprise resource planning have been implemented to improve the current information technology process of Diethelm and OLIC. ERP is the application software that can be applied in every functional area throughout the supply chain. The reason to implement ERP is to reduce cost in the long run, receive up-to-date information (online
and real time data) for decision making and also increase accuracy and minimize error in the whole process of supply chain which in this research specific to inventory management. SAP R/3, ERP/SCM application software, was introduced and implementation for the researched company for streamline the inventory control process. The processes to implement ERP software are shown in figure 4-5.

![ERP implementation methodology](image)

Figure 4-5: ERP implementation methodology

The step to implement ERP application software start from preparation phase like perform feasibility study and establish key user training session. Then continue with the next phase to establish the business blueprint. In this phase, as-is situation were analyzed and detail design or to-be business layout have to be proposed. Next continue with transformation phase, in this phase data migration from legacy system to the new ERP system have been carried out. End user training session have to be arrange to prepare all user to familiar with the new system. End with system operation; in this phase post
implementation support and system fine-tuned have to be perform to guarantee the accuracy and the reliability of the new system.

4.2.4.5 Uncertainty Management

This ODI tool is grouped under business process reengineering according to the researcher ODI framework. Currently, competitive organization should implement the tools to help them cope with the fast changing environment and turn the external force to become the organization weapon to deal with their competitor. Uncertainty management concept as shown in figure 4-6, were applied for Diethelm and OLIC to help them cope with all external forces that effect pharmaceutical business.

![Figure 4-6: Learning organization system](image)

There are three major external forces that affected all organization in the business world. These forces are both directly and indirectly impact to the organization. To turn these forces to be a business weapon is the challenge for every management. For pharmaceutical division, political force is quite important because this kind of business is under the control of government agency so change in political party might affect
pharmaceutical business more or less. Economic force like inflation, economic recession are affect several company in Thailand not only Diethelm & Co.. To make Diethelm gain business advantages over the other organization in this negative situation is very challenge for both Diethelm management and the researcher. Cultural force is another external factor that affect Diethelm business process because Diethelm is the multinational organization. They have to learn the local culture and applied themselves to these culture as much as possible to make them can competitive with the local organization.

4.2.4.6 Quality Circle

This kind of tool also categorized under business process reengineering but this tool is specific only for pharmaceutical manufacturing like OLIC. The quality circle has been implemented to promoted the total quality management concept to all the employee of OLIC. This team also builds to prepare and educate the rest of the employee within the organization to know the important of TQM process. The teams are established by selecting the major key user from different department within the organization as shown in figure 4-7. The objective of the team is the members in the team have to plan, lead and coach their department to follow them to meet the whole TQM objective.
4.2.5 Prototyping and ODI implementation

Among the topics of logistics, few hold more managerial interest than organization. The vast change taking place in logistical organization practice it one of the most difficult topics to accurately describe. The information revolution is forcing logistics managers to rethink nearly every aspect of traditional organization logic. For example, it was a sacred principle that a manager should not supervise more than eight employees. In contrast, today’s flat organization structures often feature individual managers with spans of control containing sixteen or more direct reports. A highly empowered frontline workforce having access to virtually all information is replacing the traditional idea that middle managers serve as information gatekeepers and bastions of control. Guided by
continuous redesign and reengineering of basic work, hierarchical organization are being modified to accommodate information networking and self-directed work teams. The vertical bureaucratic structure that has prevailed for centuries is giving way to horizontal approaches that focus on managing key processes.

The motivation behind functional aggregation was the belief that grouping logistics functions into a single organization would increase the likelihood of integration. The paradigm was that functional proximity would facilitate improved understanding of how decisions and procedures in one area affect performance in other areas. The belief was that eventually all functions would begin to work as a single group focused on total system performance. This integration paradigm, based on organizational proximity, prevailed throughout a thirty-five-year period. However, by the mid-1980s, it was becoming increasingly clear that the paradigm of functional aggregation might not, in final analysis, offer the best approach to achieve integrated logistics. For many firms, the ink had barely dried on what appeared to be the perfect logistics organization when new and far more pervasive rethinking of what constituted the ideal structure emerged.

Almost overnight, the emphasis shifted from function to process. Organizations began to examine the role logistical competency could play in the overall process of creating customer value like Diethelm try to persuade the new principal to sign the new agreement with them. This ushered in new thinking regarding how to best achieve integrated logistical performance. To a significant, the focus on process reduced the pressure to aggregate function into all-encompassing organization units. The critical became not how to organize individual functions but rather how to best manage the overall logistical process.
As everyone know the mission of logistics is to position inventory when and where it is required to facilitate profitable sales. This supportive work must be performed around the clock and typically throughout the world, which means that logistics needs to be an integral part of all processes. The ideal structure for logistics would be an organization that performs essential work as part of the processes it supports while achieving the synergism of cross-functional integration.

Information technology like Enterprise resource planning software (ERP – the application software mainly used to streamline the whole business flow that start from purchasing, production up to selling, ERP also include further feature like financial accounting and managerial accounting function) introduced the potential of electronic integration contrasted to physically combining logistics functions. Using information technology to coordinate integrated performance allows the responsibility for work itself to be distributed throughout the overall organization. Integration requires that logistics combine with other areas such as marketing and manufacturing.

For example, rather than focusing on how to relate distribution and inventory, the real challenge for Diethelm is to integrate distribution, inventory, new product development, flexible manufacturing, and customer service. In order to achieve overall organizational integration, Diethelm must combine a wide variety of capabilities into new organizational units. This means that the traditional single-function department must be assimilated into a process. Such assimilation often requires that traditional organization structures be disaggregated and then recombined in new and unique ways. According to the researcher’s observation, the new organization format is characterized by an extremely different culture concerning how information is managed and shared.
Diethelm commercial managers can benefit from understanding the organization development process. Such understanding permits them to evaluate their firm's current state of organization and plan changes that can be accommodated. To fully understand structural positioning and change management, it is useful to have an application concerning how traditional bureaucratic organizations evolved. Figure 4-8 illustrates five stages of organization development based on the relative balance of functional aggregation and information integration.

Figure 4-8 Logistical organization development cycle (Closs, 1996: 447)

**Empirical Confirmation: Stages 1 to 3**

The researcher has documented the evolutionary stages of integrated logistical organizations throughout the paper in the following section. The research concludes that organization implementing integrated logistics management achieved superior financial results. Those that integrated logistical management to the level of stage 1 realized an additional contribution to pretax profits of 2.6 points in comparison with firms that had managed on a fragmented basis. Those that expand integration to include the entire logistics process achieved a total additional contribution to profits of 3.4 points in comparison with those less integrated. At this stage three (3) firms also reported (1) increased sales due to improved customer service; (2) improved productivity of the
resources devoted to logistics; (3) improved operating result from manufacturing and marketing; (4) improved balance sheet strength as a result of reduced inventories, reduced account receivables, and increased cash flow. This result was gathered from grouped meeting of management, brand manager and key user during project implementation.

Stage 4: A Shift in Emphasis from Function To Process

Independent of functional aggregation or disaggregating, it is clear that organizations are struggling to position their operating capabilities to better support process-oriented management.

The concept of the new organization is proposed to Diethelm and is envisioned as the result of three factors: first, the development of a highly involved work environment with self-directed work teams (SDWT) as a vehicle to empower employees to generate maximum performance; second, improved productivity that result from managing processes rather than functions; and third, the rapid sharing of accurate information that allows all facets of the organization to be integrated. Information technology is viewed as the load-bearing structure of the new enterprise, replacing organizational hierarchy. The researcher proposed this concept to Diethelm management to issue it as the management policy before performing the actual implementation.

The essence of the argument for radical restructuring is that the traditional evolutionary concept of organization change is not sufficient to stimulate major breakthroughs in service or productivity. Rather, traditional organization change shift the balance of centralization and decentralization or realign operating structure between customers, territories, or product without any serious redesign of the basic work process. Because such restructuring typically assumes that functional organization will continue to
perform basic work, little or no different in actual practice results. In essence, companies are refocusing old business practices rather than designing new, more efficient processes.

The challenge of managing logistics as a process is threefold. First, all effort must be focused on value added to the customer. An activity exists and is justified only to the extent that it contributes to customer value. Therefore, a logistical commitment must be motivated by a belief that customers desire a specific activity to be performed. Commercial managers must develop the capacity to think externally. Second, organizing logistics as a part of a process requires that all skills necessary to complete the workflows be available regardless of their functional organization. Organizational grouping on the basis of selected function can artificially separate natural workflows and create bottleneck. When horizontal structures are put in place, critical skills need to be positioned to ensure that required work is accomplished. Finally, work performed in a process context should stimulate synergism. With system integration, the design of work as a process mean that overall organizational trade-offs are structured to achieve maximum outputs for minimum input investment.

The radical changes proposed by a shift from functional to process orientation have mixed messages fro managers involved in logistics. On the positive side, general adoption of a process orientation builds on the basic principles of systems integration. At the core of integrated logistics is a commitment to functional excellence in the context of contribution to process performance. A general shift in managing logistics as a process means that it will be positioned as a central contributor to all initiatives that focus on new product development, customer order generation, fulfillment, and delivery. The overall trend of process integration expands the operational potential and impact of logistics.
Less clear is a full understanding of how processes themselves will be performed and managed. The most advanced logistical solutions observed during the research have combined organization form and best practice performance to manage the overall logistics process using a modified hierarchical structure. The concept of matrix organization was the most acceptable structure to facilitate horizontal management in Diethelm because major business process of the organization is trigger by their product line combine with functional integration. The availability of superior information to operationalize a matrix approach relaxes dependence on a rigid formal organization structure. In term of architecture for a logistical organization, the critical questions are, (1) how much formal hierarchical structure can and should be retained while stimulating a process orientation? And (2) How can an organization be structured so that it can manage a process as complex as global logistics without becoming overly bureaucratic?

To address the above questions, top managements need to fully understand the potential of stage 5, which advocates information-driven logistical networks that integrate across organizational boundaries. This concept has been promoted to Diethelm’s management by the researcher to reengineering the company organization structure, and also the employee job role.

**Stage 5 : Beyond Structure: Virtuality and Organizational Transparency**

While several different scenarios concerning the organization of the future were technologically feasible, one of the most intriguing is speculation that formal hierarchical command and control organization structure will be replaced with an informal electronic network and use of application software often referred to as a virtual organization. A virtual organization, whether it is a total enterprise or a specific core competency, would exist as a provider of integrated performance but not as an identifiable unit of formal
organization structure. In the case of logistical function like Diethelm, key work teams might be electronically linked to perform critical activities in an integrated fashion. These work teams could be transparent in terms of the formal organization structure of their membership. In other words, formal organization charts might not be related to actual workflow. In fact, logistics organizations of the future could be characterized by functional disaggregating throughout the organization in an attempt to focus on workflow rather than structure. In order to fully exploit the benefits of information technology, a major structural and philosophical shift must take place. Command and control structures had a significant historical precedence in business that was difficult to change. In fact, some believed that such radical change could be accomplished only if the original organization solutions are completely abolished or disintegrated. In other words, simply modifying the existing organization cannot make the change. The belief that disintegration of traditional organization structure is required before the benefits of information technology can be embraced is a documented proposition.

The idea behind disaggregating is that the power of information technology will allow integrated management and performance of logistics work without grouping or aggregating functions into formal organization unit. The responsibility for performing logistics work will be organizationally positioned by users. The user in this sense is the organization that requires transportation, warehousing, inventory or any other logistics services to complete its mission. Making those who perform the logistical services an integral part of the user organization has the potential to increase relevancy and flexibility. In essence, ultimate empowerment would result. Each organization throughout an enterprise would perform its required logistical services. The disintegration paradigm is based on the belief that logistical functionality need not be organizationally assigned to
a special command and control structure to efficiently and effectively coordinate performance.

During implementation, there were many arguments counter to functional disaggregating. First and foremost was the fear that disaggregating would create a danger of reverting to a functional fixation or myopia characteristics of fragmented logistics. A second concern was that critical scale and scope in logistical operations would be lost and result in diseconomies. Finally, standardization and simplification of work may decrease if similar types of work were spread throughout user organizations without formal feedback mechanisms.

While the above arguments were not exhaustive, they are characteristic of the concerns managers have about abandoning formal integrated organizations. The key to improved performance was the realization that creating an electronic network to facilitate logistical coordination as contrasted to reliance on formal organizational structuring might increase relevancy and flexibility. Actually, the information technology did not exist when the paradigm of functional organizational grouping was launched in an effort to achieve integration requirements. Because of the newness of the ideas, it was difficult to perceive how an organization could be managed.

From a technological perspective, it was reasonable to assume that the formal logistics organizations we know today may not continue to exist in term of current command and control arrangements. Integration would increasingly be achieved via electronic imaging and networking of logistics work on an informal basis. Under such coordination, the essential aspects of integrated performance could be retained and scarce knowledge and expertise shared to achieve maximum standardization and simplification. All logistics work, regardless of when and where it is performed, could be captured as
part of the informal logistics network. Sharing common information regarding requirements and performance metrics while retaining local control offers the potential to facilitate a logistical core competency that far exceeds today’s best practice model.

The logistics organization of the future was essentially what amounts to an electronic keritsu. Adopted from eastern culture, the “keritsu” is a loosely affiliated group of business firms that share commonalities and are committed to cooperative behavior. The transparent logistical network organization was properly viewed as a composite of affiliated business function that are motivated and directed by common interest and goals. Information sharing facilitates the informal network.

The idea of a virtual organization was broader than simply creating structural transparency. The notion that entities can join forces to achieve common goals and then disband has significance for the challenges of managing alliances. The aspects of virtuality that deals with a fluid and flexible group of firms working together to combine their individual core competencies will have a major impact on the future of logistical service suppliers. It gave substance to the idea of a disposable logistics competency that users could acquire when needed and then abandon when no longer required. The idea of disposable logistics had application in such areas as special promotion, seasonality, and new product development and introduction. The fact that firms today constantly form and then dismantle alliances give credibility to the notions of both transparency and virtuality.

In light of where organization structure had been and where it might go, commercial managers need to assess those ideas that have the greatest applicability and are most likely to be implemented. Four general theories appear to be particularly relevant
for commercial manager and have been applied at Diethelm: structural compression, empowerment, teaming and learning.

**Structural compression**

Many different terms and concepts had been used to capture highly visible aspects of organizational change. Terms such as downsizing, flattening, networking, clustering, right sizing, delayering, reengineering and non-hierarchical are abundant in the popular managerial press. All these ideas have one thing in common – the desire to structure organizations so that they can perform required work better while using fewer human resources. However, what was at stake was broader than simply trying to do more with less. The nature of logistical work is changing, and it was only logical that organization structures would change to facilitate lean execution.

The motivation for logistical structural compression started with the changing role of the chief logistics executive in case of Diethelm is commercial manager. In an environment characterized by restricted head count and intensive asset control, the senior logistics manager was emerging as an integral part of a firm’s continued struggle to gain and maintain customer loyalty. In today’s competitive environment, senior logistics executives may spend more than 50 percent of their time working directly with customers. This frontline commitment typically mean performing as a member of a cross functional or category team. While logistics officers have traditionally visited with customers at the request of sales executive to explain performance failures, their current role is less that of a sacrificial lamb and more as a planner of upcoming events or a provider of a strategic vision. To achieve effective customer participation, logistics executive needed to have direct access to all types and levels of information.
Change at the top typically result in change throughout an organization. For the most part, such change in logistics organizations has focused on restructuring and downsizing middle management. A great deal has been written about the changing needs of business in terms of white collar information workers and their traditional contribution to data flow and control. The knowledge revolution may have its greatest impact on middle management. The availability of transaction based data warehouse meant that time and personnel, previously used to analyze and format information, are no longer required. In fact, the delays encountered by such analysis cannot be tolerated in a time-based competitive environment. Rather, managers and worker must be capable of performing their own analysis. Organization arrangements must facilitate sharing of operational and strategic information when and as needed. Elaborate internal clearance procedures to obtain operational information could no longer support the quick analytical trade-offs required today. Rather, information sharing needed to transcend all layers of the organization and be easy for appropriate personnel to access. It follows that the fewer the organization layers, the less chance of information delay, distortion, amplification, or omission.

Therefore, while restructuring typically means fewer people, the desire to change is also related to improved response speed and flexibility. The bureaucratic command and control organization structure that effectively served the needs of yesterday simply does not satisfy the requirements of the information age. Beyond determining the layers of management that offer the correct balance between effective supervision and desired agility, the changing of basic structure requires careful review of long-standing beliefs. Of particular interest to logistical management were traditional relationships regarding centralization/decentralization, line and staff distinction, and matrix structuring.
Centralization/Decentralization The distinction between centralized and decentralized organization has traditionally been based on the degree of authority and profit responsibility delegated to specific operating units. Within an enterprise, units or divisions are considered highly decentralized if they function on an autonomous basis. In a fully decentralized structure, each organizational unit would have responsibility for providing its own logistical planning and execution. For example, in a decentralized environment, individual plants may control and coordinate their own transportation and procurement needs. The opposite would be the case in a centralized organization. Logistical planning and execution would be directed from a central headquarters group such as corporate traffic or procurement, that dictates which carriers and suppliers each plant will use.

However, recent developments in distributions in distributed information processing no longer require a centralized logistics organization to provide efficient data processing. The result is a trend toward pushing logistical responsibility down the organization. One factor that has encouraged centralized operation exists; high cost resources and specialized talent can be shared among users. A direct relationship exists between desired degree of centralization and the overall nature of business operations.

Line and Staff Distinction Another concept requiring reconsideration is the distinction was that line and staff in logistical organization. The traditional distinction was that line performed or executed day-to-day operations, while staff engaged in planning. This distinction has lost its relevancy. This case represented brand manager and sale representative for Diethelm and OIL.

To a significant degree, contemporary logistics managers, at all levels, are involved in both planning and operations. As will be discussed under empowerment, the
need to become directly involved and to assume some responsibility for both why and how work should be performed is critical to leading-edge logistical practice. Logistics managers are well aware that frontline employees, such as delivery drivers, interface more with customers than employees at any other level of their organization. A driver’s understanding of customer requirements and what work best is critical to planning and achieving high-level performance.

Depending on the nature and urgency of the task, what could be defined as a line function one day may very well be a staff function the next. Once again, the impact of management information systems had all but eliminated the traditional staff/line distinction. With fewer middle managers, more analysis must be performed and implemented in frontline jobs. Executives need to establish and communicate the desired and dedicated balance of the staff and line nature of all jobs. The result was an organization that reflects total employee resources dedicated to servicing customers through maximum integration.

*Matrix to Horizontal Structure* Under a functional structure, logistical activities such as distribution and warehousing are grouped into clusters and related by direct lines of authority and responsibility. Such functional grouping typically utilizes line command and control to allocate resource to operations.

As an enterprise begins to confront the challenge of process management, it becomes difficult and even undesirable to maintain the crystal-clear lines of authority and responsibility representative of functional organizational structures. In a command and control structure, it is difficult to achieve the cross-functional flexibility required to satisfy unique customer requirements. One solution that managers have to develop to resolve cross-functional operations was initially referred to as a matrix organization.
In the original matrix organization, two senior managers shared overall responsibility for the enterprise. The first senior manager focused on financial aspects and was responsible for the profitability of specific organizational units that were often structured around product categories, geographical proximity, or class of business. The second senior manager focused on resources and was responsible for the deployment of human and physical assets across organizational units.

The matrix model of structuring authority and responsibility gained popularity in service organization like Diethelm. Brand manager were given full accountability for specific clients or projects and were assigned skilled personnel from resource pools on the basis of project requirements. While the skilled personnel were directly responsible to the resource manager, they were temporarily assigned to the brand manager. The brand manager had direct authority for work design, temporary assignment of functional staff, and project control. The brand manager typically shared recommendation concerning promotion, salary increase, and other benefits for the skilled personnel with the resource manager. On completion of the project, skilled personnel would return to the functional pools for reassignment.

The potential of a matrix organization structure has gained renewed interest as managers struggle with the challenges of process management. The matrix approach requires a technical resource group that can be geographically deployed as necessary to satisfy line-unit requirements. The approach offers way to share scarce assets and technical resources on a flexible basis. As such, it reduced the potential duplication of highly skilled personnel across business units. An offsetting factor is that temporary personnel might not feel the same commitment that is characteristic of a traditional functional organizational arrangement.
The modern extension of the matrix approach to business structure is increasingly referred to as a horizontal organization. When restructuring an organization, the key question for the commercial manager concerns how innovative to make the new structure. Issues related to organization capacity, resource availability, critical knowledge and skill-set requirements, economy of scale, and economies of scope serve to mediate the degree of desirable transition from vertical to horizontal management. The judgment of how horizontal become will vary with each department units and will directly relate to the extent of information technology adoption.

Empowerment

Empowerment is another organization development methodology that was used to implement at Diethelm. To empower actually means to delegate. The delegation of authority was not the new management concept. What was new to this organization is about contemporary empowerment is the extent to which employees are permitted and expected to make decisions related to performance of their assigned work. Empowerment starts with availability and willingness of senior management to freely share relevant information.

The motivation that we used behind the empowerment is a belief that the overall effort to satisfy customers will be enhanced if frontline employees were permitted to take, what in their judgment is, appropriate action. Such on the spot decision-making can greatly speed up a firm’s response to customer requests.

In logistics supply chain process of Diethelm, empowerment could range from accommodating all order requirements on a one-call basis to on the spot resolution of delivery discrepancies. Likewise, an empowered organization permits mid-level management to resolve problems and use proactive judgments. The extent to which an
organization was empowered is reflected in response speed. A wide range of decision does not need to transcend a business hierarchy for approval in an empowered organization. Employees were afforded maximum opportunity to perform their assigned work.

Empowerment in Diethelm took on special meaning. The multitude of details required to support the work of logistics make it essential that frontline managers be positioned to complete all aspects of their respective work. If the essence of leadership is flexibility, then details of how work is ideally performed must be formalized through standardized methods and maximum simplification. By achieving such formalization, the foundation was established to capitalize on flexible operations to satisfy important customer requirements. But some area like first line staff, it was found the ODI Team could provide them only a little degree of empowerment due to the level of maturity based on their educational level and their age.

Teaming

One of concept of TQM has been implemented at Diethelm but not finished yet is Self-Directed Work Team (SDWT). The concept of a SDWT has its origins in the cross functional committee. The idea that multiple viewpoints are often better than one has long standing in administrative practice. The development of SDWTs, however, extended the power of group behavior in two important ways at Diethelm.

First, the researcher used SDWT for unstructured special assignment for problem solving. The original concept was that a committee (that establish to include key users from different department) would convene to review or evaluate a special situation, make recommendations and then be dismantled. A similar expectation was common in special purpose workgroups. In logistics supply chain, such special committees or workgroups
might be formulated to facilitate development of a new software application like ERP
(that we also implement) or to handle a unique requirement, such as selecting a new
distribution warehouse location at Bangna km. 21. In other situation, standing committees
were structured to meet a regular basis to perform some specified duties. Like in OLIC, a
standing committee might be assigned to perform audit and compensation reviews. The
team is an alternative to the more traditional departmental organization structure.

A second unique characteristic of an SDWT that the researcher implemented, was
the way its performance is planned and executed. The label self directed meant that the
team membership is empowered to do whatever it takes to most effectively and efficiently
perform designated work. A group of highly motivated people selected to represent
different skills and knowledge would on the surface appear to have greater synergistic
potential than a traditional vertical organization consisting of worker with a permanent
supervisor. Part of the appeal of the team was its focus on process as contrasted to
functional parochialism. Finally, a team approach provided the opportunity for the tasks
involved to be guided by workers, as opposed from managers. These evidences had been
gathered from group interview during the project implementation.

As expect, managers encounter problem in structuring effective SDWTs. The
researcher has gone so far as to conclude, "When managers try to form teams, they
usually fail." A summary of reasons for this follows;

- Failure to establish specific performance goals or challenges related to
  expected result.
- Failure to clearly establish the role of individual accountability in the
  context of team performance.
• Formation of team often creates rivalries founded in turfism. All work is typically viewed as the rightful domain of some existing group or department.

• Supervisors and managers often have problems letting team perform without restriction. Problem related to managerial involvement can be magnified when team members are assigned from vastly different organizational units within an enterprise. The danger is that the agendas of the different employee parent units often hinder team performance. The managements have to manage this threat.

• Finally, team confront the need to reconcile the members' various backgrounds, different skill sets, educational preparation, titles, compensation levels. Perhaps the most difficult is to resolve is compensation discrepancy. These data were collected from interviewing with key user.

• The fact that significant changes are required in how work is structured to achieve major performance breakthroughs is acceptable to most managers and workers. To date, it appears that teams had greater success when given special achievement assignments as contrasted to the performance of continuous work. One reason for this may be the fact that permanent teams are not typically supported by development of performance measurement system to gauge their progress towards goal achievement. The nature of work performs in logistics offer ample opportunity to apply team concepts. Selecting and assembly of warehouse orders, receipt and processing of
customer orders and resolution of shipment quantity discrepancies are all areas where teams can provide productivity improvements.

The insights and potential achievements of SDWTs, as opposed to traditional committees have appealed. The unleashing of creativity and the benefit of synergistic result were the powerful motivators to encourage consideration of team structures.

**Organization Learning**

The other organization development tool that the researcher applied at Diethelm was organization learning. Organization learning is a relatively new term in management. While learning has always been a recognized attribute for individual workers and managers, its extension to the overall organization introduced some significantly different challenges and potential benefits. The researcher could say that the primary challenge for senior management was to promote and nurture the organization’s capacity to improve and innovate. In this sense, learning became the unifying force for the organization, replacing control as the fundamental responsibility of management.

There could be little debate during implementation that today’s logistical executives and workers need to become better educated to cope with challenges embodied in the widespread change. The ability to manage processes and avoid pitfalls of steep organizational hierarchy means that all employees at all levels need to enhance their capacity to learn.

However, learning involved more than developing new individual skills and knowledge to achieve superior results. An organization tried to develop the capacity to retain experience and pass it along through generations of workers and managers. Thus, learning in the broadest sense involved programs and devices to retain and share
knowledge. Once again, the power of information technology seemed like the saving grace.

On-line transaction systems like ERP could be designed to window or display critical data-banked experience to assist workers who are empowered to make decisions. The key of effective flexible logistics rests with a capability to hypothesize and evaluate alternative operating scenarios. The point here was that the learning must transcend technique to encompass use of information. In order to benefit from experience, an organization must learn how to retain it and make it available to others. Finally, learning had a direct relationship to individual careers and the more general called loyalty.

Managing change

The final method of concern to logistics managers was how to deal with change or uncertainty situation or sometimes called risk. It was one thing to decide what should be done. It is an entirely different thing to get it done. Once again, logistics manager cannot expect to find a blueprint to guide them. For managers in Diethelm generally, they were involved in three primary types of change.

First, there were issues related to strategic change. This involves the implementation of new and improved way to service customers.

The second type of change concerned modifications in a firm’s operational structure. On the basis of strategic considerations, logistics executives were constantly engaged in modifying where products are positioned, how customer requirements are handled and so forth.

The third type of change concerned human resource structure. As the mission and scope of logistics change, managers have traditionally found it difficult to alter organization structures in a timely manner.
At Diethelm, one of the first steps in bringing about organization structure modification was to create a positive attitude among managers and workers. It required understanding the need for change. Hopefully a commitment to learning and development of mutual loyalty initiatives will go along way toward establishing a positive change culture. All those involved accept the fact that organization change is inevitable if a firm is to remain competitive.

A second important consideration was to avoid a quick-fix mentality. The prevailing command and control structure has survived for Diethelm, it cannot all be dismantled overnight. The key was the development of a change model that charts a meaningful and believable course of transition. Commercial manager should use caution in trying to accelerate the transition of logistical organization structures through the five evolutionary stages discussed earlier. While it might possible to accelerate change, it appears that trying to skip, what research indicate is, the natural evolution of organizations can be highly dangerous and may result in aborted restructuring attempts. Therefore, despite the appeal of changing quickly, proceeding with care may enhance real success.

A final consideration during implementation was an organization’s capacity to absorb new and challenging ways to improve performance. While all of the desired change it taking place, the day-to-day business still needed to be run. Though some advocate radical change, it did not appear to fit logistical organization very well.

The problem in this part was magnified by the fact that most significant changes did not result from self-improvement initiatives. Rather, radical improvements were typically generated by external creativity. This prompt us that the belief that massive change could be achieved only by total destruction of existing structural arrangements.
Phase III: Post ODI

4.2.6 ODI fine-tuned and adjustment

It was clear to the researcher right from the start that the ODI process is not the one time implementation process. In this research study, the target group needed the following process to tune them be "in sync" with the fast changing environment. Although the ODI implementation at Diethelm and OLIC were successful when measured in both quantitative analysis and qualitative analysis, fine tuning process is still necessary because there are still some gaps between actual result and the target result. For example, there are still others in the warehousing staff who have some resistance toward the new inventory control process after implement enterprise resource planning. Other former staff also resisted toward the new organization structure and the new job role because they familiar with the old one that they routinely practice for a long period of time. This kind of issue must solve as soon as possible. If they are not solved, it might obstruct the new organization development in the future. Successful ODI have to minimize the gap between theoretical and real practice as much as they can.

4.3 Quantitative Analysis

Most of this part is based on the statistical analysis form post ODI questionnaire and interview. This section of the discussion is the quantitative analysis used to support qualitative analysis presented in the preceding sections. The questions that show in the below table come from the researcher's questionnaire presented in Chapter Three. The researcher used the same questionnaire for pre and post organization development intervention.
Organization culture

In the following session, the researcher would like to prove the hypothesis that organization culture has been affected by organization development intervention. The first table 4.1 shows the mean for each question include in questionnaire for organization culture part. The second table 4.2 shows the significant value for paired test at 0.05 percent level of significant.

Table 4.1 Paired samples statistics result for organization culture

<table>
<thead>
<tr>
<th>Pair</th>
<th>Question 1.1 Pre</th>
<th>Question 1.1 Post</th>
<th>Question 1.2 Pre</th>
<th>Question 1.2 Post</th>
<th>Question 1.3 Pre</th>
<th>Question 1.3 Post</th>
<th>Question 1.4 Pre</th>
<th>Question 1.4 Post</th>
<th>Question 1.5 Pre</th>
<th>Question 1.5 Post</th>
<th>Question 1.6 Pre</th>
<th>Question 1.6 Post</th>
<th>Question 1.7 Pre</th>
<th>Question 1.7 Post</th>
<th>Question 1.8 Pre</th>
<th>Question 1.8 Post</th>
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</thead>
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<td>Mean</td>
<td>N</td>
<td>Mean</td>
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<td>2.30</td>
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Table 4.2 Paired samples Test for organization culture

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<th>Paired Samples Test</th>
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<tbody>
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<td>Paired Differences</td>
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<td>---------------------</td>
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</tr>
<tr>
<td>Pair 2 Question 1.2 Pre - Question 1.2 Post</td>
</tr>
<tr>
<td>Pair 3 Question 1.3 Pre - Question 1.3 Post</td>
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<td>Pair 4 Question 1.4 Pre - Question 1.4 Post</td>
</tr>
<tr>
<td>Pair 5 Question 1.5 Pre - Question 1.5 Post</td>
</tr>
<tr>
<td>Pair 6 Question 1.6 Pre - Question 1.6 Post</td>
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<tr>
<td>Pair 7 Question 1.7 Pre - Question 1.7 Post</td>
</tr>
<tr>
<td>Pair 8 Question 1.8 Pre - Question 1.8 Post</td>
</tr>
</tbody>
</table>

According to the above statistic result in the organization culture part, every level of significant is below .05 percent of significant that shown in table 4.2. This means the above hypothesis was accepted. The Organization Development Intervention activities affected a change in organization culture in Diethelm. The result from the interview also guaranteed that some cultural practices or behaviors in Diethelm have been changed in the positive way like different division and department tried to reduce the competitive environment. They tried to minimize the cost that charged between different division. Every division head tried to have meetings with another division more often when compare to the past.

**Organization structure**

In the following section, the researcher would like to prove the hypothesis that organization structure of the target organization has been changed after implementing organization development intervention. Table 4.3 shows the mean for each question
included in questionnaire for organization culture part. The second table 4.4 shows the significant value for paired test at 0.05 percent level of significant.

Table 4.3 Paired samples statistics for organization culture

<table>
<thead>
<tr>
<th>Paired Samples Statistics</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
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<tbody>
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<td>.466</td>
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<td>Pair 2 Question 2.2 Pre</td>
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<td>Question 2.3 Post</td>
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<td>Question 2.7 Post</td>
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</table>

Table 4.4 Paired samples test for organization culture

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<th>Paired Differences</th>
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<th>Std. Error Mean</th>
<th>95% Confidence Interval of the Difference</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
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</thead>
<tbody>
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</tr>
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</tr>
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</table>
As a result from organization structure post ODI questionnaire, the researcher can conclude that the organization development intervention have only a little bit effect to Diethelm organization structure due to some significant value is greater than .05 percent of significant and some is below .05 percent level of significant that shown in table 4.4. The above hypothesis has not fully accepted. This might be cause from the organization structure of Diethelm (Thailand) were rigidly set by Diethelm headquarter so change to the organization structure have to wait for a long period of time to success as expected. However, some of the organization has been changed. For example, accounting department is decentralizing their staff to join in each sales unit.

**Job role**

In the following session, the researcher would like to prove the hypothesis that job role has been affected by organization development intervention. The first table 4.5 shows the mean for each question include in questionnaire for organization culture part. The second table 4.6 shows the significant value for paired test at 0.05 percent level of significant.

**Table 4.5 Paired Samples Statistics for Job role**

<table>
<thead>
<tr>
<th>Paired Samples Statistics</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
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Table 4.6 Paired Samples Test for Job role

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<th>Std. Error Mean</th>
<th>95% Confidence Interval of the Difference</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
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</tbody>
</table>

As a result from statistical analysis, the researcher can conclude that the organization development intervention effect to the job role and job description within Diethelm but not at 100 percent because some questionnaire have below .05 percent level of significant and some questionnaire the value from SPSS is higher than .05 percent level of significant as shown in table 4.6. This shows that the above hypothesis has been rejected. It’s the same like organization structure, change in the job description are taken long period of time to be success. One important reason is job role is related to the organization structure. Change in job role require completely change in organization structure. However, Diethelm and OLIC staff realized that the change in their job description that the researcher get this feeling form questionnaire and interview.
Inventory Management

In the following session, the researcher would like to prove the hypothesis that inventory management process has been affected by organization development intervention. The first table 4.7 shows the mean for each question include in questionnaire for organization culture part. The second table 4.8 shows the significant value for paired test at 0.05 percent level of significant.

Table 4.7 Paired samples statistics for inventory management

<table>
<thead>
<tr>
<th>Paired Samples Statistics</th>
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<th>N</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
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Table 4.8 Paired samples test result for inventory management process

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<tr>
<th>Paired Samples Test</th>
<th>Paired Differences</th>
<th>95% Confidence Interval of the Difference</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>Std. Deviation</td>
<td>Std. Error Mean</td>
<td>Lower</td>
<td>Upper</td>
<td></td>
</tr>
<tr>
<td>Pair 1 Question 4.1 Pre Question 4.1 Post</td>
<td>-.07</td>
<td>.521</td>
<td>.095</td>
<td>-.26</td>
<td>-.13</td>
</tr>
<tr>
<td>Pair 2 Question 4.2 Pre Question 4.2 Post</td>
<td>-.10</td>
<td>.607</td>
<td>.111</td>
<td>-.33</td>
<td>-.13</td>
</tr>
<tr>
<td>Pair 3 Question 4.3 Pre Question 4.3 Post</td>
<td>.00</td>
<td>.643</td>
<td>.117</td>
<td>-.24</td>
<td>.24</td>
</tr>
<tr>
<td>Pair 4 Question 4.4 Pre Question 4.4 Post</td>
<td>-.23</td>
<td>.935</td>
<td>.171</td>
<td>-.58</td>
<td>.12</td>
</tr>
<tr>
<td>Pair 5 Question 4.5 Pre Question 4.5 Post</td>
<td>.20</td>
<td>.761</td>
<td>.139</td>
<td>-.08</td>
<td>.48</td>
</tr>
<tr>
<td>Pair 6 Question 4.6 Pre Question 4.6 Post</td>
<td>.27</td>
<td>1.143</td>
<td>.209</td>
<td>-.69</td>
<td>.16</td>
</tr>
<tr>
<td>Pair 7 Question 4.7 Pre Question 4.7 Post</td>
<td>.23</td>
<td>.774</td>
<td>.141</td>
<td>-.06</td>
<td>.52</td>
</tr>
</tbody>
</table>
From result in table 4.7 and 4.8, the researcher can summarize that the organization development intervention tools like ERP and SCM slightly improve the inventory management process. The result was shown in the table that every significant values are higher than .05 percent level of significant. This mean the above hypothesis was rejected. The main reason why the result is negative because the implementation process of ERP and SCM do not complete yet when the researcher conduct post-ODI interview session and survey. During the implementation of ERP software, there are many resistant of change raise from the staff of Diethelm. The main reason is the fear of looses their job when the new system was implemented. Some user try to protect themselves by do not give any information to the project team. These caused some problem because the benefit of the ERP implementation effected the whole organization. If some departments did not coordinate, the project would have high chances to fail. This issue needed more attention form top management level to minimize or solve it.

Managerial function

In the following session, the researcher would like to prove the hypothesis that all managerial function has been affected by organization development intervention. The first table 4.9 shows the mean for each question include in questionnaire for organization culture part. The second table 4.10 shows the significant value for paired test at 0.05 percent level of significant.
### Table 4.9 Paired Samples Statistics for Managerial Function

<table>
<thead>
<tr>
<th>Pair</th>
<th>Question 5.1 Pre</th>
<th>Pre</th>
<th>Question 5.1 Post</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2.47</td>
<td>30</td>
<td>1.074</td>
<td>.196</td>
</tr>
<tr>
<td>2</td>
<td>3.10</td>
<td>30</td>
<td>.803</td>
<td>.147</td>
</tr>
<tr>
<td>3</td>
<td>2.60</td>
<td>30</td>
<td>.675</td>
<td>.123</td>
</tr>
<tr>
<td>4</td>
<td>2.03</td>
<td>30</td>
<td>.765</td>
<td>.140</td>
</tr>
<tr>
<td>5</td>
<td>3.57</td>
<td>30</td>
<td>.679</td>
<td>.124</td>
</tr>
<tr>
<td>6</td>
<td>2.97</td>
<td>30</td>
<td>.765</td>
<td>.140</td>
</tr>
<tr>
<td>7</td>
<td>2.67</td>
<td>30</td>
<td>.711</td>
<td>.130</td>
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<td>4.00</td>
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</tr>
<tr>
<td>9</td>
<td>2.27</td>
<td>30</td>
<td>1.143</td>
<td>.209</td>
</tr>
</tbody>
</table>

### Table 4.10 Paired Samples Test result for managerial function

<table>
<thead>
<tr>
<th>Pair</th>
<th>Question 5.1 Pre</th>
<th>Question 5.1 Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-57</td>
<td>1.040</td>
</tr>
<tr>
<td>2</td>
<td>.50</td>
<td>.861</td>
</tr>
<tr>
<td>3</td>
<td>.20</td>
<td>.887</td>
</tr>
<tr>
<td>4</td>
<td>.10</td>
<td>.662</td>
</tr>
<tr>
<td>5</td>
<td>-.13</td>
<td>.629</td>
</tr>
<tr>
<td>6</td>
<td>-.67</td>
<td>.922</td>
</tr>
<tr>
<td>7</td>
<td>.47</td>
<td>.730</td>
</tr>
<tr>
<td>8</td>
<td>.07</td>
<td>.868</td>
</tr>
<tr>
<td>9</td>
<td>.43</td>
<td>1.040</td>
</tr>
</tbody>
</table>

Paired Differences

<table>
<thead>
<tr>
<th>Mean</th>
<th>Std. Error Mean</th>
<th>Std. Error</th>
<th>95% Confidence Interval of the Difference</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-57</td>
<td>1.040</td>
<td>.190</td>
<td>-.96 - .18</td>
<td>-2.984</td>
<td>29</td>
<td>.006</td>
</tr>
<tr>
<td>.50</td>
<td>.861</td>
<td>.157</td>
<td>-.13 - .53</td>
<td>3.181</td>
<td>29</td>
<td>.003</td>
</tr>
<tr>
<td>.20</td>
<td>.887</td>
<td>.162</td>
<td>-.37 - .10</td>
<td>1.235</td>
<td>29</td>
<td>.227</td>
</tr>
<tr>
<td>.10</td>
<td>.662</td>
<td>.121</td>
<td>-.15 - .35</td>
<td>.828</td>
<td>29</td>
<td>.415</td>
</tr>
<tr>
<td>-.13</td>
<td>.629</td>
<td>.115</td>
<td>-.37 - .10</td>
<td>-1.161</td>
<td>29</td>
<td>.255</td>
</tr>
<tr>
<td>-.67</td>
<td>.922</td>
<td>.168</td>
<td>-1.01 - -.32</td>
<td>-3.959</td>
<td>29</td>
<td>.000</td>
</tr>
<tr>
<td>.47</td>
<td>.730</td>
<td>.133</td>
<td>.19 - .74</td>
<td>3.500</td>
<td>29</td>
<td>.002</td>
</tr>
<tr>
<td>.07</td>
<td>.868</td>
<td>.159</td>
<td>-.26 - .39</td>
<td>.421</td>
<td>29</td>
<td>.677</td>
</tr>
<tr>
<td>.43</td>
<td>1.040</td>
<td>.190</td>
<td>-.04 - .82</td>
<td>2.282</td>
<td>29</td>
<td>.030</td>
</tr>
</tbody>
</table>
According to the statistical result from table 4.9 and 4.10, the researcher can conclude that the above hypothesis of the research has been accepted. Organization development intervention effected to the managerial function of every management level within Diethelm and OLIC. The 2-tails significant value is mostly below 0.05 percent level of significant so the hypothesis have been accepted. This was because during the project implementation, most of Diethelm management realized their role in the project and also in the whole organization. They tried to adapt themselves to the learning organization concept of the organization development intervention. Most of them known how to distribute their work time to perform the four main managerial functions like planning, organizing, leading and controlling. However, from interview the ratio or proportional that management used for the four managerial functions was depend on the level of that people in the organization hierarchy.

Risk Management

In the following session, the researcher proved the hypothesis that risk management policy has been affected or guided by organization development intervention. The first table 4.11 shows the mean for each question include in questionnaire for organization culture part. The second table 4.12 shows the significant value for paired test at 0.05 percent level of significant.
Table 4.11 Paired Samples Statistics for Risk Management

<table>
<thead>
<tr>
<th>Paired Samples Statistics</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
<th>Std. Error of Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1 Question 6.1 Pre</td>
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<td>1.383</td>
<td>.252</td>
</tr>
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<td>Question 6.1 Post</td>
<td>3.40</td>
<td>30</td>
<td>1.248</td>
<td>.228</td>
</tr>
<tr>
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<td>30</td>
<td>1.251</td>
<td>.228</td>
</tr>
<tr>
<td>Question 6.2 Post</td>
<td>3.83</td>
<td>30</td>
<td>1.117</td>
<td>.204</td>
</tr>
<tr>
<td>Pair 3 Question 6.3 Pre</td>
<td>2.50</td>
<td>30</td>
<td>1.009</td>
<td>.184</td>
</tr>
<tr>
<td>Question 6.3 Post</td>
<td>2.77</td>
<td>30</td>
<td>.858</td>
<td>.157</td>
</tr>
<tr>
<td>Pair 4 Question 6.4 Pre</td>
<td>3.23</td>
<td>30</td>
<td>1.135</td>
<td>.207</td>
</tr>
<tr>
<td>Question 6.4 Post</td>
<td>3.43</td>
<td>30</td>
<td>1.104</td>
<td>.202</td>
</tr>
<tr>
<td>Pair 5 Question 6.5 Pre</td>
<td>2.27</td>
<td>30</td>
<td>.828</td>
<td>.151</td>
</tr>
<tr>
<td>Question 6.5 Post</td>
<td>2.60</td>
<td>30</td>
<td>.675</td>
<td>.123</td>
</tr>
</tbody>
</table>

Table 4.12 Paired Samples Test result form Risk management

<table>
<thead>
<tr>
<th>Paired Samples Test</th>
<th>Paired Differences</th>
<th>95% Confidence Interval of the Difference</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Std. Deviation</td>
<td>Std. Error of Mean</td>
<td>Lower</td>
<td>Upper</td>
</tr>
<tr>
<td>Pair 1 Question 6.1 Pre</td>
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<td>1.332</td>
<td>.243</td>
<td>-1.03</td>
<td>-.04</td>
</tr>
</tbody>
</table>
| Question 6.1 Post     |                   |               |                    |       |       | 29              | .036
| Pair 2 Question 6.2 Pre | -0.40             | 1.102         | .201               | -.81  | .01   | -1.989          |
| Question 6.2 Post     |                   |               |                    |       |       | 29              | .056
| Pair 3 Question 6.3 Pre | -0.27             | 1.015         | .185               | -.65  | .11   | -1.439          |
| Question 6.3 Post     |                   |               |                    |       |       | 29              | .161
| Pair 4 Question 6.4 Pre | -0.20             | 1.126         | .206               | -.62  | .22   | -0.972          |
| Question 6.4 Post     |                   |               |                    |       |       | 29              | .339
| Pair 5 Question 6.5 Pre | -0.33             | .844          | .154               | -.65  | -.02  | -2.163          |
| Question 6.5 Post     |                   |               |                    |       |       | 29              | .039

The result that was shown in table 4.11 and 4.12, the value of significant was separated into 2 parts. Some is below .05 percent level of significant but some are higher than .05 percent level of significant. These results caused the researcher cannot conclude that organization development intervention is influence to Diethelm and OLIC management to perform risk management. The researcher could not 100 percent accept the above hypothesis since some result are shown in the negative way. This could cause
from some management plan and organize their workforce according to the fast changing
environment but some were not during the ODI implementation.

Total Quality Management

In the following session, the researcher would like to prove the hypothesis that
total quality management concept and practice have been affected by organization
development intervention. The first table 4.13 shows the mean for each question include
in questionnaire for organization culture part. The second table 4.14 shows the significant
value for paired test at 0.05 percent level of significant.

Table 4.13 Paired Samples Statistics for TQM

<table>
<thead>
<tr>
<th>Paired Samples Statistics</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
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<td>2.53</td>
<td>30</td>
<td>.900</td>
<td>.164</td>
</tr>
<tr>
<td>Question 7.1 Post</td>
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<td>30</td>
<td>.809</td>
<td>.148</td>
</tr>
<tr>
<td>Pair 2 Question 7.2 Pre</td>
<td>2.67</td>
<td>30</td>
<td>.959</td>
<td>.175</td>
</tr>
<tr>
<td>Question 7.2 Post</td>
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<td>30</td>
<td>.923</td>
<td>.168</td>
</tr>
<tr>
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<td>.091</td>
</tr>
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<td>30</td>
<td>.430</td>
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</tr>
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<td>30</td>
<td>.712</td>
<td>.130</td>
</tr>
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<td>Question 7.4 Post</td>
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<td>.568</td>
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<td>.139</td>
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<td>Question 7.5 Post</td>
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<td>30</td>
<td>.681</td>
<td>.124</td>
</tr>
<tr>
<td>Pair 6 Question 7.6 Pre</td>
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<td>30</td>
<td>.938</td>
<td>.171</td>
</tr>
<tr>
<td>Question 7.6 Post</td>
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<td>30</td>
<td>.973</td>
<td>.178</td>
</tr>
<tr>
<td>Pair 7 Question 7.7 Pre</td>
<td>1.77</td>
<td>30</td>
<td>.679</td>
<td>.124</td>
</tr>
<tr>
<td>Question 7.7 Post</td>
<td>1.50</td>
<td>30</td>
<td>.509</td>
<td>.093</td>
</tr>
<tr>
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<td>30</td>
<td>1.073</td>
<td>.196</td>
</tr>
<tr>
<td>Question 7.8 Post</td>
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<td>30</td>
<td>.785</td>
<td>.143</td>
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Table 4.14 Paired Samples Test result form TQM

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
<th>95% Confidence Interval of the Difference</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1 Question 7.1 Pre</td>
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<td>1.106</td>
<td>.202</td>
<td>-.91</td>
<td>-.09</td>
<td>-2.475</td>
<td>29</td>
</tr>
<tr>
<td>Pair 2 Question 7.2 Pre</td>
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<td>.898</td>
<td>.164</td>
<td>-.57</td>
<td>.10</td>
<td>-1.424</td>
<td>29</td>
</tr>
<tr>
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<td>.461</td>
<td>.084</td>
<td>-.01</td>
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<td>1.980</td>
<td>29</td>
</tr>
<tr>
<td>Pair 4 Question 7.4 Pre</td>
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<td>.730</td>
<td>.133</td>
<td>-.81</td>
<td>-.26</td>
<td>-4.000</td>
<td>29</td>
</tr>
<tr>
<td>Pair 5 Question 7.5 Pre</td>
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<td>.661</td>
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<td>-.58</td>
<td>-.09</td>
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<td>29</td>
</tr>
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<td>.765</td>
<td>.140</td>
<td>-.65</td>
<td>-.08</td>
<td>-2.626</td>
<td>29</td>
</tr>
<tr>
<td>Pair 7 Question 7.7 Pre</td>
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<td>.640</td>
<td>.117</td>
<td>.03</td>
<td>.51</td>
<td>2.283</td>
<td>29</td>
</tr>
<tr>
<td>Pair 8 Question 7.8 Pre</td>
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<td>1.042</td>
<td>.190</td>
<td>-.89</td>
<td>-.11</td>
<td>-2.628</td>
<td>29</td>
</tr>
</tbody>
</table>

According to the support statistical result and some data gather from post ODI interview session. Most of the result is lower than .05 percent level of significant so we can accept the above research hypothesis. This level of significance indicates that the ODI showed some effects on the whole process of TQM in Diethelm and OLIC. This process TQM was mostly implemented at OLIC because it’s the process that related to manufacturing flow. Management of OLIC had high intention to improve the whole manufacturing process and would like to streamline the whole production cycle. Every staff within the organization had been selected to join the quality circle team and directly report to Quality steering committee. The teams had been well formed and the major responsible is trying to promote the concept of TQM for their department. That’s the reason why the result that the researcher got from the statistical analysis was quite positive.
CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

Pharmaceutical logistics is undergoing massive change. New concept and ideas concerning the best organization to achieve logistical goals appear daily. The challenge of the implementer is to sort through the best of time-proven practices and merge them with the most applicable new ideas and concept. However, these should match with the organization culture and fast changing environment.

The research process started with project preparation phase to perform feasibility study and begin preliminary study before the project start. Then it continued with the pre-organization development phase to collect the basis requirement and information. Data gathering procedure like interview, questionnaire and report analysis have been applied here to gather the raw data. The researcher spent about one month to collect all related data. The researcher also spent a lot of time (about one and a half month) to analyze and transfer raw data to be useful information that written in Chapter 4.

After collecting the data and key issues were summarized using the business process analysis, the researcher continued with the next phase – the organization development implementation. By using information from the previous phase, the researcher started to find out the alternative, select the organization development tools and design the best new business process to Diethelm and OLIC. During this phase, several management policy and steering committee meeting had to be called out to make
the decision for some critical process that change quite a lot from the current business paradigm.

From the review and implement of logistics organization development at Diethelm and OLIC found that most advance function of firm have evolve through three stage of functional aggregation. The evolution started from a highly fragmented structure in which logistical functions were assigned to a wide variety of different departments. The objective of organization aggregation was to aggregate functions in an effort to improve operational integration.

The advent of management focusing on critical processes began to usher in what is referred to as the horizontal organization. Today the research’s organizations are beginning to consensus with stage 4 organizations as they shifted from functional to process management. There is evidence that a fifth stage of organization may continue developing. Stage 5 adopted the use of information technology to implement and manage logistics as a transparent organizational structure. The implemented concept has particular appeal to the management of logistics, which involve substantial challenge in terms of time and geographical scope of operation.

This research or as the researcher called project have been taken a long period of time to finish. To change management or perform organization revolution has been the on-going process. Some organization development tools have been finished implement but some still continuing up to now. That is the reason why in the research methodology, the researcher also include the post organization development in the part of ODI fine tuned as one step in the methodology.

During the implementation, the researcher also faced a lot of problem, both in human resource and ODI itself. Some key user refused to participate and gave the
valuable information to the project team since they fear that if the new business process has been successfully implemented can cause them to lose their job. In another side, organization development also could not fully matched to all the business process at Diethelm and OLIC. Some business process and organization culture still have to remain as it is because change to the new one might cause the whole organization to lose more money and time consuming more than anybody expected.

Conclusion

First, the Diethelm logistics process is complex. It involved many dimensions or areas of issues, different functions and levels of authority, as well as the dynamics of human interaction. But, it clearly evident, that the ODI processes and activities generated changes in both the organizational and management related factors such as change from vertical to horizontal based organization structure.

In addition to the relationships that exist between organization that sell and buy the products, numerous business transactions take place between service providers and their customers. The structures of the resulting business relationships span the range of channel classifications. Global logistics operations must accommodate all domestic requirements and also deal with increased uncertainties associated with distance, demand, diversity, and documentation. ODI have impact to all of the major function within Diethelm and OLIC such as change in their organization structure, facilitate the process to confront with external environment and manufacturing process was well documented based on TQM basis.

One important case during implementation organization development intervention at Diethelm and OLIC, the management sincerely believe that improving the firm's performance would take considerable time and effort on the part of both senior and
middle management. The management also believed that the vast majority of managers had neither the training nor the work experience to implement such initiatives. Actually, the top managements expected strong resistance from the middle management team. The researcher also participates in an implementation plan detailing specific development. The managements mostly focus to simplify the logistics process and try to customize the logistics process to more fast response to changing situation. That’s the reason why they try to use both organization development and information technology to fulfill their requirements. Some logistics processes have been slightly effect by implementing ODI like warehousing process have been changed from pre-invoicing to post invoicing warehouse management.

Organization development affected Diethelm organization culture, managerial function, risk management policy and total quality management practice in the positive manner. Management fee when transfer goods from one division to another division have been eliminated. All four major managerial functions have been properly applied to each level throughout the management hierarchy. Risk management policy have been properly set to cope with fast changing environment and fluctuated economic situation. Quality circle also apply at OLIC, every member in quality management team realize about the important of the team and their role.

However, organization development intervention did not fully affected to the organization structure, job role and inventory management. For organization structure and job role, there was an interrelationship between these two variables. Change to organization structure cause to change in the employee job role. But organization structure cannot easily change within half a year, however the structure had slightly changed when compared to pre-ODI phase. One major example was the central
purchasing department had been established, the new job role have emerged and the employee have been rotated or the new staff have been employed. But the whole structural reengineering required a long period of time to success. For the long history company like Diethelm, organization evolution might be better than revolution.

In inventory management part, the organization development tools mostly focus on the process; technological tools have been applied to material management process flow. However, ERP still not fully implement to Diethelm. Only some part like material management, sale and distribution and financial accounting were implemented so that the staff cannot see the real picture how the ERP work. They still doubt about whether it will be better than current system. These causes the post ODI result was negative for these three variables.

**Recommendation**

The recommendation could be summarized from chapter 4 for each variable in the following session,

- Counterproductive organization cultures have to be eliminated or minimized, and positive or supportive cultures have to promote the every employee within the organization.

- Matrix organization structure should be applied to Diethelm rather than functional or product departmentalization. Based on the finding, Diethelm and OLIC major business based on trading. Only functional departmentalization or product departmentalization sometimes slows down the whole business process because people in the team have no authorization to make some critical decision-making. Matrix organization is better because there are
consist of people from both functional specific and product specific result to streamline in day-to-day business process.

- Current job descriptions have to be reviewed to make them valid with current situation. Job rotation might be applied at OLIC to motivate some employees.
- Enterprise resource planning software like SAP has been selected to replace the legacy system. The expectation for the management was this software will streamline the overall supply chain.
- Empowerment and self directed work team have been introduced to Diethelm management. These concepts have been implemented to some sales force team at Diethelm.
- Change management correlated with risk management policy has been developed to cope with uncertainty situation.
- Quality circle team has been set at OLIC to control and improve all the manufacturing process according to Good Manufacturing Practice (GMP standard).

However for this research, recommendation is based on the researcher’s expectation for the research organization since suitable organization development interventions was already done for the research’s organization. However, during the implementation there are several limitations that obstruct the success of the organization development. One example is implementing the OD and ERP at distribution center. The researcher found many negative responses from the key users; they resisted giving us the information and trying to hinder themselves to participate in the project. Probably the warehouse manager is the one who resist the implementation and his subordinates are followed him. Actually, this cause from the management policy that they don’t want to
change so much in warehouse process because they afraid of if a lot of change happen, some unpredictable situation might happen when the project go live. However, if this unpredictable situation were found ODI fine tuned or uncertainty management have to be applied as soon as possible to minimize this unpredictable situation. But in fact the warehouse manager would like to clean unsuitable process and re-impliment the whole warehouse process again. This unmatched requirement between management level and warehouse manager cause the warehouse people to resist the implementation process. However, the researcher try to minimize this resistant by coordinate with top management to visit the warehouse people on their site every week to act as public relation to promote the benefit to them and the whole organization after organization development intervention implementation.

However, the organization development process is the on going process that needs the participant to continue developing the new concept and idea about organization development to cope with the future-changing environment. Some organization development cannot finish within the limitation timeframe like organization structure redesign. So this need more time to be successes. Everyone in the learning organization have to continue to learn and adapt themselves and the whole organization to properly cope with uncertainty. Remember that every change cannot be settled within one day, continued and fine tuned process is the most necessary.

Further recommendation for anybody who would like to successfully implement organization development in any organization is the researcher have to know and understand clearly about that organization and try to build the willingness to change to every members mentality within the organization before change will be carry out.
QUESTIONNAIRES

Instruction  Please match the strength of your agreement according to:

1 – Strongly Disagree
2 – Disagree
3 – Partially Agree
4 – Agree
5 – Strongly Agree

Part I: Questionnaires on Organization Culture
1. The organizational goal are set in autocratic manner. 5 4 3 2 1
2. All decision-making is centralized. 5 4 3 2 1
3. My authority is narrowly defined. 5 4 3 2 1
4. People are selected and promoted on the basis of friendship. 5 4 3 2 1
5. Training is provided in a narrowly defined specialty. 5 4 3 2 1
6. Managers exercise directive leadership. 5 4 3 2 1
7. Communication flow is primarily top-down. 5 4 3 2 1
8. My superior strict in the punishment for control. 5 4 3 2 1

Part II: Questionnaires on Organization Structure
1. I am completely clear who is my boss. 5 4 3 2 1
2. I know what position I am in the organization chart. 5 4 3 2 1
3. I feel freely to go across department to get information. 5 4 3 2 1
4. I know exactly how many subordinates I handle. 5 4 3 2 1
5. I always know an order through chain of command. 5 4 3 2 1
6. The company allows me to report upward.

7. I can go directly to the key manager when I need some emergency decision-making.

**Part III: Questionnaires on Job Role**

1. I feel I am independent in doing my work if it is delegated to me.

2. I am assigned to do the specific task and practice repeatedly.

3. I always get the right authority along with the assigned tasks or projects.

4. I am asked to share opinions in problem-solving by my boss.

5. The assigned tasks are challenging to me.

6. I get clear information from my boss for an assigned projects or tasks.

7. I have time limitation on each assigned project.

8. There is a formal job description for my role

**Part IV: Questionnaires on Inventory Control**

1. Top management determines inventory control policy.

2. Turn over rate of your inventory is high.

3. Warehouse manager was empowered to perform all Inventory control function.

4. The stocks in store are always full to supply your customer.

5. The manufacturer policy is basically make-to-stock.
6. There is a consignment inventory policy in your company.  
7. My company inventory value is quite high.

**Part V: Questionnaires on Managerial function**

1. There is an upward planning in your organization.  
2. The planning processes do not related to the external factor.  
3. The major authority is often based on seniority.  
4. There is an employee advisory board in your company.  
5. There is a lifelong employment in your company.  
6. My manager consults with you when making decision.  
7. My boss is very autocratic.  
8. I am rewarded based on my performance.  
9. Financial reward is a must for me.

**Part VI: Questionnaires on Risk management**

1. Most of the time, my decision is based on uncertainty.  
2. My company plan is always based on external factor.  
3. There is the risk management policy in my company.  
4. There is a SWOT analysis used in marketing plan for my company.  
5. Contingency plan exist for every action that related to me.

**Part VII: Questionnaires on Total Quality Mangement**

1. Total quality management was promoted to every member within the organization.  
2. I am the member of quality control circle team.  
3. There is a high production variance in my company.
4. Every member in manufacturing plant plan and make decision together.

5. Every line staff was empowered to make their day-to-day decision making.

6. There is a quality meeting every day during workhour.

7. My company was certified with ISO9000 and ISO14000.

8. My company manufacturing process is strictly follow GMP standard.
INTERVIEW GUIDES

Organization and management related question

1. What is your company culture? How does it affect employee? What symbols, traditions, and norms typify in your organization?

2. How the current organization culture hinder your company adaptation to the external environment.

3. What problem that you think is the major problem in you company? And how you solve the problem.

4. What are the advantages of centralized management approach?

5. How can your company stay competitive with another healthcare company?

6. What are the controllable and uncontrollable factors for company success? And how you respond to them?

7. Please describe your organization structure in detail, which type they are and how your separate each department.

8. Are you having clear company mission and company objective.

9. What are the strength, weakness, opportunity and threat within your organization?

10. Describe the communication flow within your organization.

11. In what level that your subordinates allow to make decision in their current job?

12. What are your criteria to recruit the new employee and how you assign them the role in your organization.

13. Each position within your company has clear job description for them.

14. To what extent do you believe that managers you have known in business or elsewhere have a clear understanding of their objectives?
15. Do you believe in the management by objectives could be introduce in your organization? Are your objective verifiable?

16. In your organization, what does your superior expect from you in respect to the level of performance? Is it stated in writing? Are there any consistence between you and your boss’ objective?

17. How can your strategies be implemented effectively?

18. How does risk aversion affect your own organization? Give a situation to illustrate the affect.

19. What type of organization departmentalization was used in your company? And why you departmentalize the organization according to this?

20. What is the leadership style for your manager? Is it situational based or individual person based? And how affect to your work please described.

21. Are you satisfy with the company incentive plan and what is your suggestion.

22. What is the company procedure or any factor that effect to the rewards that the management gives to the employee?

23. Any variance from company plan or company objective are acceptable or not. If yes, what is the next step that should be applied?

**Manufacturing related question**

1. What is your organization’s stock and materials management policy?

2. What is the current organization structure in part of manufacturing? What are current roles and responsibilities? And what is the number of people in each role?

3. What is the physical warehouse structure?

4. What is your general policy for goods movement? And what is the turn over rate of your inventory?
5. How do you handle the case that the quantity in inventory and in your profit and loss statement is not equal?

6. Do you have QA procedures for incoming and outgoing goods?

7. Are there any shelf life expiration date controls for your inventory? Please describe.

8. What is the information you use to balance the inventory level that enough to supply the demand of the customer?

9. What type of your organization manufacturing process? Make-to-stock or make-to-order? Do you have the report to control the production variance?

10. Are you applying the concept of consignment stock or just-in-time inventory in your organization?

11. What are the biggest problems in the current situation?

12. What kind of information do you need to control the process? Which of these is not available?

13. Do you apply the Total Quality Management in your organization? If yes, what is the benefit you get from TQM?

14. What are the major purposes that guide you to use the TQM in your organization?

15. How do you communicate the concept of TQM to every staff under your responsible?

16. Are there any TQM steering committees in your organization?

17. What is the major issue after you use the TQM that you would like to be solve?

   And any solution that you have.

18. What is the process of TQM that you would like to enhance and how?
19. Any deviation from company TQM's control is acceptable or not? And how did you tune this deviation to meet the TQM target?
## CHECK LISTS

### Check list for secondary source of data

<table>
<thead>
<tr>
<th>Items to be collected</th>
<th>Objective of check list</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Organization chart</td>
<td>To know what is the current organizational structure of the researched company. To know how the company was departmentalized and knows the span of control.</td>
</tr>
<tr>
<td>2. Company policy</td>
<td>To know the main policy or procedure of the researched organization like company strategy or policy about employee rewards. Some organization culture can observe by look in company policy.</td>
</tr>
<tr>
<td>3. Job description</td>
<td>To know the current job description for each member in the researcher sample group. Some hinder role can be observed for the formal job description in addition to questionnaire and interview session.</td>
</tr>
<tr>
<td>4. Stock balance report</td>
<td>To know about the current level of company inventory in term of quantity and value and also know about the inventory turn over rate per month.</td>
</tr>
<tr>
<td>5. Organization yearly plan</td>
<td>To know how well the organization plan for the future. And also know about how well the management consider the external environment and uncertainty situation include in their plan.</td>
</tr>
<tr>
<td>6. Batch production records</td>
<td>To know how the organizations follow the Goods Manufacturer Practices standard for healthcare industry. This document can help the researcher explore how well the employees commit to TQM.</td>
</tr>
<tr>
<td>7. Production report</td>
<td>To know how many variance occur in the production process. This can further measure to how effective the TQM that was carry out by production and inventory control staff.</td>
</tr>
<tr>
<td>8. Others</td>
<td>For other documents</td>
</tr>
</tbody>
</table>
BIBLIOGRAPHY

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Journals


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Name: Mr. Manorot Vittayapipat

Qualification: 7 years in IT
6 years SAP
Logistics Expert
MM, PM, PS, and QM expertise
ABAP/4 experience

Languages: Thai, English (fluent)

SUMMARY
I have very strong background in Logistics both SAP and business knowledge. I have broaden experience in Logistics includes MM, PM, PS, and QM. Additionally I possess a strong leadership skill that makes him an excellent team leader in any implementations. I am one of a few experienced PM consultants in Thailand.

SAP PROJECT EXPERIENCE

Diethelm Thailand & OLIC Thailand
Lead consultant in the area of Material Management
The project involves complex business processes with intensive warehouse interfaces.

T.C.C. Ruamtun Co., Ltd.
As a lead consultant in the area of Plant Maintenance for 2 beer manufacturing plants.

HC Starck Thailand Co., Ltd.
As a lead consultant in the area of Material Management. I had implemented complex functions such as batch valuated stock and active ingredients to meet the hi-tech and precious Tantalum production requirements.

Toshiba-Carrier (Thailand) Co., Ltd.
As a lead consultant in the area of Plant Maintenance and Quality Management, my tasks were to implement and enhance the plant maintenance process and optimize the quality assurance system of TCTC.

Rayong Electricity Generating Company Ltd.
Responsible for implementing SAP R/3 in PM and PS. Further he analyzed user requirements and customized and enhanced the SAP R/3 software package accordingly.
Curriculum Vitae

Electricity Generating Public Company Ltd.

Responsible for implementing SAP R/3 in MM. I further analyzed user requirements, designed and developed solutions, customized and enhanced the SAP R/3 software package. My tasks included the installation and upgrade of the SAP server on HP9000.

LIST OF PROFESSIONAL POSITIONS

<table>
<thead>
<tr>
<th>Period</th>
<th>Organisation</th>
<th>Description of activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-</td>
<td>Symphony Consulting Alliance Thailand Co., Ltd.</td>
<td>Senior Logistic Consultant.</td>
</tr>
<tr>
<td>1995-2000</td>
<td>Electricity Generating Public Co., Ltd.</td>
<td>Information System Engineer: Responsible for the implementation and support in SAP R/3 MM, PM and PS. I was also in charge of developing and designing system infrastructure including SAP Basis and networking.</td>
</tr>
</tbody>
</table>

EDUCATION

Bachelor Degree in Science & Technology (Information Technology), Assumption University, Bangkok, Thailand.
Curriculum Vitae

SAP R/3 Partner Academy:
- Security Concept, SAP Asia
- SAP R/3 Workbench Organizer, Transport System and Upgrade, SAP Thailand
- SAP R/3 ABAP/4 Development Workbench Reporting, SAP Thailand
- SAP R/3 Material Management Functionality and Customizing, SAP Thailand
- SAP R/3 Procurement, SAP Thailand
- SAP R/3 Advance System Administration, SAP Thailand
- SAP R/3 Plant Maintenance Functionality and Customizing, SAP Asia

St. Gabriel's Library, AU