A REENGINEERING APPLICATION TO THE SERVICE SECTOR: A CASE STUDY OF A FRUIT & VEGETABLE MARKET

by

Mr. Chairat Wiboonmongkol

A Final Report of the Three-Credit Course
CE 6998 Project

Submitted in Partial Fulfillment
of the Requirements for the Degree of
Master of Science
in Computer and Engineering Management
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Project Title	A Reengineering Application to the Service Sector: A Case Study of a Fruit & Vegetable Market
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The Graduate School of Assumption University has approved this final report of the three-credit course. CE 6998 PROJECT, submitted in partial fulfillment of the requirements for the degree of Master of Science in Computer and Engineering Management.

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ABSTRACT

For several years, firms have faced unprecedented change: global and local competitiveness, political realignments and the rapid advance of information technology. Against this horizon, the concept of Business Process Reengineering (BPR) quickly caught the attention and imagination of members of top management of various companies. Pathommongkol Market (PM), a new member of Internal Trading Department, Thailand, would like to explore the application of reengineering to one of its major business process — the Collection Process- though this project study. The possible applicability of BPR to the company is explored through analysis of the central issues of the concept, the emerging experience of organizations who have outfitted it and implementation of a discussed methodology. This methodology consisted of a "central thread" and supporting elements. A systematic design approach was considered in the redesign procedure rather that the clean sheet approach. Emphasis was given on the detailed redesigned processes, systems and organizational structure of Collection. Implementation strategy, activities and resource requirements were stated for recommendation together with some considered successful factors.

ACKNOWLEDGEMENTS

I am indebted to the following people and organizations. Without them, this project would not have been possible.

I would like to express my sincerest thanks and appreciation to my advisor, Dr. Chammong Jungthirapanich, for his invaluable guidance and support throughout the course of this project study.

Grateful recognition is expressed to Pathommongkol Market, the biggest fruit-vegetable market in the central region of Thailand, for allowing me to conduct the study and providing the necessary information for the completion of the paper. Gratitude is also extended to all staff members of Pathommongkol market.

I would like to thank my close friends- Win, Somrid, Pisuit and Pavinee Srisung — for their help, care, and support. Special thanks is also expressed to Consolacion Teneza Chua, a lovely friend from Philippines, for sharing her experiences, resources, tips, and techniques regarding the subject matter.

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Above all special appreciation is due to my parents for their invaluable sacrifices, unfading love and care.

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1.1 Overview

"A lot of money that should be cut out of the federal bureaucracies would be found if you had a really serious effort to review operations from a quality perspective. I read in Fortune a great article on General Electric under Jack Welch. When he started this sort of review, they found - and this is a very well run company...- they found there were four people working in a room sending copies of reports to 24 different people...No one ever read the report. Everybody always thought someone else was. When they cancelled this operation, they saved $150,000 a year. That's the sort of thing I am convinced is out there all over the government."(Democratic Presidential Nominee Gov. Bill Clinton, August 1992).

Business Process Reengineering means not only change -- but dramatic change. What constitutes dramatic change is the overhaul of organizational structures, management systems, employee responsibilities and performance measurements, incentive systems, skills development, and the use of information technology. Business Process Reengineering, (BPR) can potentially impact every aspect of how we conduct business today. Change on this scale can cause results ranging from enviable success to complete failure.

Successful BPR can result in enormous reductions in cost or cycle time. It can also potentially create substantial improvements in quality, customer service, or other business objectives. The promise of BPR is not empty -- it can actually produce revolutionary improvements for business operations. Reengineering can help an aggressive company to stay on top, or transform an organization on the verge of

bankruptcy into an effective competitor. The successes have spawned international interest, and major reengineering efforts are now being conducted around the world.

On the other hand, BPR projects can fail to meet the inherently high expectations of reengineering. Recent surveys estimate the percentage of BPR failures to be as high as 70%. Some organizations have put forth extensive BPR efforts only to achieve marginal, or even negligible, benefits. Others have succeeded only in destroying the morale and momentum built up over the lifetime of the organization. These failures indicate that reengineering involves a great deal of risk. Even so, many companies are willing to take that risk because the rewards can be astounding.

Many unsuccessful BPR attempts may have been due to the confusion surrounding BPR, and how it should be performed. Organizations were well aware that changes needed to be made, but did not know which areas to change or how to change them. As a result, process reengineering is a management concept that has been formed by trial and error -- or in other words practical experience. As more and more businesses reengineer their processes, knowledge of what caused the successes or failures is becoming apparent.

However, BPR projects are popular at the moment as critical revision that may contribute substantially to the performance improvements and enhancements needed for competitiveness. Many large companies worldwide have experienced the value of implementing BPR. For example;

AT&T with a healthy does of BPR were able to control laying off of 40,000 workers in a massive reorganization.

Texas Instruments cuts its order processing time and improved customer perceptions of the firm offering poor services.

American Express reported major cost saving through reengineering.

Thus, BPR is about breaking off from and doing away with past administrative traditions when marginal adjustments to past practices do not seem to help the organization in dealing with its current situation.

By the way, Pathommongkol Market (PM) is the new biggest fruit-vegetable market in the central region of Thailand. It located only 56 kilometers away from Bangkok, covers an area of over 50 rai.

PM is established as the meeting point of the fruit-vegetable buyer and the vendors in August 1996. At that time, most of the vendors are the groups of agriculture. They are arranged in the low income population. So, they asked the PM owner to open free-trade process along 5 years with their administrative team. It means that the PM owner can be only their supporters and can not request any fee from them.

From time to time, they apply some techniques like old management process. They always face with the same problems but it still does not clean out of the system. The main problems concern about the customers (buyer and the vendors)' requirement and satisfaction; especially, when the customers need to know information about fruit &vegetable, such as price and place; the administrative department can not give any information and statistic data.

On August 2001, it is the due date of the old administration. The PM owner needs to reorganization step by step by utilizing business process reengineering (BPR). At first, he really wants to plan and redesign the system that totally concerned about the collection process because this is the heart of the factor which runs whole organization, it can be implemented by other departments.

Therefore, this project study explores the introduction, application and analysis of business reengineering methodology for the collection process in a fruit-vegetable market (Pathommongkol Market) in Nakornpathom Province.

1.2 Objectives

The overall objectives of this project study is to explore the possible strategy of application of business process reengineering in a fruit & vegetable market through analysis of reengineering methodology.

Specifically, this project aims the following:

(1) To study and plan the organization facilitate and disseminate the application of a BPR methodology.

(2) To redesign various business processes to meet customers' requirement and satisfaction.

1.3 Scope

Due to time constraint, this project focused on the processes involved in collection process by using a reengineering approach to their organization.

II. LITERATURE REVIEW

2.1 Overview

From the end World War II to nowadays, the market structure has changed tremendously. With trade barrier falling, competition intensifies by oversee competitors. The market is driven by customers because of excess suppliers. Customers take charge and demand products and services that are designed for their unique need. As the needs and tastes of the customers change constantly, the nature of change has also changed; it has become both pervasive and persistent. Under the of notion of the division of labour principle that divides process into small and clearly defined tasks, classical business structures are no longer suitable in a world where competition, customers and change demand flexibility and quick response. A good example to show this is order-fullfilment. It starts when a customer places an order and ends when the goods are delivered. The process typically involves a dozen or so steps that are performed by different people in different departments. Clearly, there are no customer service and no flexibility to respond to special requests. No-one is responsible for the whole process and can tell a customer when the order will arrive. Furthermore, the order passing across different departments makes the process error-prone and also delays progress at every hand-off. There are still many further problems. In particular, people working in different departments look inward and upward toward their boss and department, rather than outward toward their customers. The notion of business process re-engineering addresses the problems of the way we should work and the hierarchical structure of organizations.

2.2 The Emergence of BPR

In 1990 and again in 1993, some definitive works were put forth by **Dr.** Michael Hammer, James Champy, and Thomas Davenport. Hammer, named by Business Week

as one of the four preeminent management gurus of the 1990s, together with Champy, chairman of CSC Index, Inc., gathered information about organizations thriving in their respective industries, along with assorted management consulting experiences. They were asking the questions of, "What worked and why?" along with "What didn't work and why not?" They discovered that most of the companies that had succeeded in changing their processes had used a similar set of tools and tactics. They called this set of procedures Business Reengineering.

Thomas Davenport also performed research in this area, asking similar questions, through his work at Ernst & Young's Center for Information Technology and Strategy. By examining companies that were redesigning processes, he gathered information on methods and practices which led to the successful implementation of what he called Process Innovation.

Although slightly different, both Business Reengineering and Process Innovation address the concept of redesigning how businesses perform strategic processes. In fact, both approaches shared a number of core activities. Because processes were at the heart of these management philosophies, the term Business Process Reengineering, or BPR, was adopted to describe these efforts. Since then, a myriad of books, articles, seminars, workshops, and computer tools have been developed by academicians, management consultants, and software developers to help organizations actually perform BPR.

2.3 BPR Definition

There are many misconceptions as to the essence of reengineering. Many times organizations go through a major reorganization and call it reengineering. Others reduce their staffs by half and call it reengineering. Still others will simply take an efficiency program they have in place and rename it reengineering.

Reengineering is not "reorganizing". Reengineering looks at what work is required to be done, not how the organization is structured. Organization structures are defined only after the processes necessary to produce products and services for the organization's customers are designed. The organization structure is then designed so it best supports that process.

Reengineering is not "downsizing". Downsizing focuses on the reduction of people to achieve short term cost reductions. Reengineering, on the other hand, focuses on rethinking work from the ground up, eliminating work that is not necessary and finding better, more effective ways of doing work that is.

Reengineering is not simply about making an organization more efficient. You can have the most efficient organization in the world, but unless it effectively serves its customers, in essence, accomplishes its mission, it is still of no value. Reengineering is about creating value for the customer. Value may be defined by the customer at lower cost, higher quality, or increased response time.

Corporate Information Management (CIM)

From the Department of Defense's Corporate Information Management (CIM) initiative, the DoD has defined business process reengineering in terms of functional process improvement. DoD guidance defines functional process improvement as:

"The application of a structured methodology to define a function's "as-is" and "to-be" environments, current and future mission needs and end user requirements; its objectives and strategy for achieving those objectives, and a program of incremental and evolutionary improvements to processes and data that are implemented through functional, technical, and economic analysis and decision making "

One major thrust behind the DoD's business process reengineering philosophy is "we must fix the process before we try to automate it". This means simply that an

organization should redesign its business processes before applying automated information technology. Many organizations within DoD have spent millions of dollars on information technology, automating existing processes, without determining whether or not those processes were even necessary. This philosophy advocates that only after business processes have been streamlined can and should automation be applied. If done correctly, this would produce an increase in performance, not only through the streamlining of the process, but also, an additional increase through the use of properly applied information technology.

"This includes structuring of functional management processes by OSD Principle Staff Assistants to produce and control the use of data and information in functional activities. In the past, information resources management in DoD tended to concentrate primarily on automated information systems and their associated technology. Through the Defense Information Management (IM) program, the Department will emphasize the primacy of functional requirements in the supporting role of information technology." (DoD Management Guidance, 15 January 1993)

Corporate Reengineering

The most common definition used in the private sector comes from the book entitled, Reengineering the Corporation, a Manifesto for Business Revolution, by MIT professors Michael Hammer and James Champy. Hammer and Champy defined business process reengineering as:

"The fundamental rethinking and radical redesign of business processes to bring about dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service, and speed." (Reengineering the Corporation, Hammer and Champy, 1993)

The major emphasis of this approach is the fact that an organization can realize dramatic improvements in performance through radical redesign of its processes. This is in contrast to the notion of streamlining processes in order to achieve a measured level of performance.

Another aspect to the Hammer/ Champy definition is the notion of breakthroughs. This approach to reengineering assumes the existing process is not sound and therefore needs to be replaced. A properly reengineered process will provide quantum leaps in performance, achieving breakthroughs in providing value to the customer.

Tapscott and Caston (1993) said that it is "a fundamental revaluation/redesign of a company's business processes and organization structures in order to achieve dramatic improvements in its critical success factors — quality, productivity, customer satisfaction and time to market etc."

On the other hand, according to Morris and Brandon (1993), reengineering is an approach to planning and controlling change. It means redesigning business processes and then implementing the new processes. In this definition, the purpose of the change is not explicitly stated, but the implementation of the change is the main issue.

The AT&T Quality Steering Committee (1991) defines BPR as "the redesign and implementation of a process or a major part of a process to meet new customer requirements or achieve significant improvements in process performance." Another process focused definition.

Hall, Rosenthal and Wade (1993) also regard reengineering as "the redesign and improvement of business processes both in depth (roles and responsibilities, measurement and incentives, organizational structures, information technology, shared values and skills) and breadth (activities to be included) which can lead to long-term profits."

Davenport (1993) grasps it in one step further and saying that BPR is only part of what is necessary in the radical change of processes. The term "process innovation" was originated by him to cover the envisioning of new work strategies and steps, the actual process design activity, and the implementation of change in organizations involving the human resources and technology.

With the various definition generated about BPR, Hean Lee Poh and Wan Wan Chew of the National University of Singapore (1995) capture the essence of all and provide a framework, shown in Figure 2.1.

Even though these definitions focus on different strategies of implementing change, the common element is that the change occurs across the whole process.

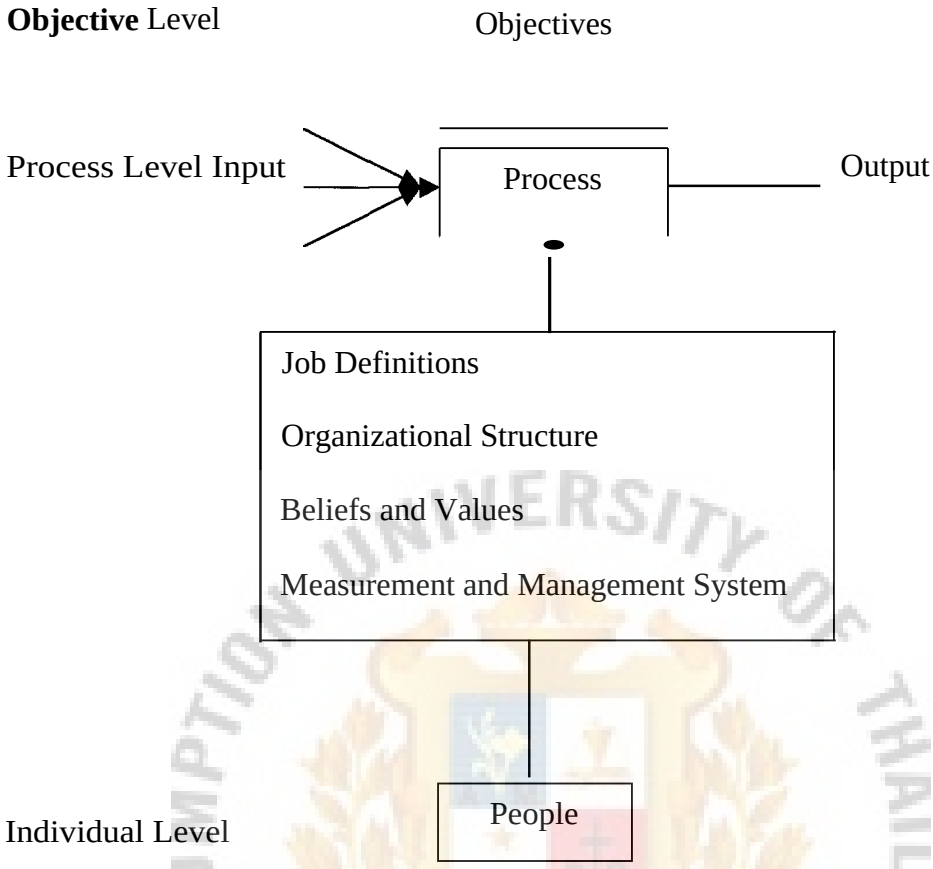

Figure 2.1. A Four-Level Framework Leading to the Definition of BPR (Hean and Wan 1995).

2.4 Evolution of Business Process Reengineering Concept

The concept of reengineering traces its origin back to management theories and concepts develop as early as the nineteenth century with the purpose of "making all your processes the best". In 1880's, Federick Taylor suggested that managers use process reengineering methods to find out the excellent processes for performing work and in order to optimize productivity, such processes should be reengineered. However, in his time, large companies design processes were not in a cross-functional or cross-

departmental environment. Thus, specialization was the key technique to improve efficiency and effectivity with a given technology.

In the 1900's, Henri Fayol originated the concept of reengineering which is: To conduct the undertaking toward its objectives by seeking to derive optimum advantage from all available resources. In that same period, Lyndall Urwick, a business engineer stated "It is not enough to hold people accountable for certain activities, it is also essential to delegate them the necessary authority to discharge that responsibility."

But in 1993, Hammer and Champy, considered the high priest of business process reengineering (BPR) and author of Promise of Reengineering presented and defined BPR as the fundamental rethinking and radical design processes to achieve dramatic improvements in cultural contemporary measures of performance, such as cost, quality, service and speed. It is then simply considered as the process of trying to get rid of the outdated rules and guidelines and go for a change. It helps to eliminate the problems and to keep the qualified element of the organization for continuous enhancements and improvements. Its general objectives are to maximize cost reduction, prevent population re-growth and optimize organizational effectiveness and efficiency. However, every BPR project has its own unique objectives.

Davenport and Short (1990), however, present BPR as an extension of established management approaches, in particular Industrial Engineering (IE). It therefore draws on the unrivalled power of the "mechanizing vision" of F. W. Taylor's Scientific Management. In a like manner, Wilkinson (1991) describes re-engineering as "Industrial Engineering in Action". Because of this, Klein (1993) argues that the US Navy has something to do with this around the turn of the century and that "what Henry Ford did to automobile manufacturing in 1910 was also BPR". Even though they do not make such extreme claims, other writers and authors such as Parker (1993) and Morris

and Brandon (1993) identify "time and motion" and other IE techniques as important components of BPR.

Also, a third perspective is offered by Shillingford (1992) and Lopes (1993) who viewed BPR as originated from Japanese — style quality programs. Shillingford noted the concept as the same with Japan's "best manufacturing practice", which uses the idea of just-in-time techniques, can be applied to the office as well as to the factory. Johannson et al (1993) also proposed that BPR, Just-in-Time (HT) and Total Quality Management (TQM) are "of one family". However, they argue that BPR is "an escalation of the efforts of JIT and TQM", which pushes the JIT and TQM philosophies upstream and downstream to the customer and supplier.

Therefore, BPR has become as much as a part of the business language and culture of 1990's as total quality management (TQM) and other "quality banner" initiatives were in the 1980s (Barber and Wenston, 1998).

2.5 BPR Vision

- Shared Information
- Mission Support
- Functional Leadership
- Reduced Cost
- Reusable Technology
- Just-In-Time

Figure 2.2. Vision of BPR (Thomas 1995).

Business Process Reengineering (BPR) is based on a vision of the future that is increasingly shared by enterprises around the world. It is evolving into the sum total of everything we've learned about management in the industrial age recast into an information age framework.

Shared Information

Information is a corporate asset. Some would say that, next to people, it is the most important asset an enterprise has. Like all important assets, information must be well managed if it is to provide a return on the investment made to acquire it.

As the Information Age takes hold, the principles of data management are clear. Data is entered into the corporate data base once, and only once; it is maintained at the point of entry. Corporate data is to be made available where and when it is needed, and in the format and context in which it is needed, along with appropriate security.

Mission Support

All information resources in the organization need to have a mission focus. There is no other reason for capturing and maintaining data except that it supports the defined mission of that agency. Business processes will be redesigned in such a way that those activities which support mission will be strengthened; those activities that do not add value will be eliminated.

Functional Leadership

All departments must participate in and take responsibility for the management of their corresponding department.

Reduced Costs

Activities that increase the cost of doing business but provide no benefits to the customer are to be reduced or eliminated. Top management must search out and

eliminate such non-value added activities and costs so that scarce funding resources can be applied to those activities that provide a higher return on investment.

Reusable Technology

The emphasis has shifted from custom developed, unique information management systems to the use of off-the-shelf technology and software to support standard business processes. Systems that must be custom developed will employ engineering-like development methods and strong life-cycle project management controls. However, if there is a need for a new developed technology acquisition will be reasonable.

Just - in -Time

Information, training and support will be delivered electronically to the work site at the precise time it is needed, whether that work site is an office or a vehicle.

This vision shares many features with the transformation that is occurring in the private sector in this country and around the industrial world. The hierarchial, compartmental corporation organized by function, product, or territory is giving way to the horizontally structured enterprise organized around business processes.

2.6 Objectives of BPR

- ❖ Cost of Doing Business
- ❖ Unit-cost Management
- ••• Fee-for Service
- ❖ Continuous Process Improvement
- ••• Leadership

Figure 2.3. Objectives of **BPR** (Thomas 1995).

Let's focus on five key objectives of Business Process Reengineering. Achieving these objectives will help us realize the vision of the future, which will ensure that we meet our department's mission requirements.

Cost of Doing Business

In today's downsizing environment, cost reductions are of ever-increasing importance. So, one of the objectives of **BPR** is to reduce the cost of doing business by getting organizations involved in eliminating their:

(1) Obsolete and inefficient processes

(2) Obsolete regulations and controls

(3) Unnecessary management overhead

(4) Lengthy review and approval cycles

Unit -Cost Management

Every department is required to look into their respective expenditure to determine the cost of producing its products and services. Once these costs are known, top management can use **BPR** principles to lower the cost of production while at the same time improving quality and customer service.

Fee -for- Service

If our products and services have value, then our customers, should be willing and able to pay for them. Our goal is to apply more business-like practices to the management of our agencies. By determining customer requirements and then meeting those customer requirements competitively we will begin to provide more value to our customers at a lower cost.

Continuous Process Improvement

Process improvement is not a one-time exercise. Process Managers all over the world are learning that responding to customer needs, searching for quality materials

and making processes more efficient and effective by the wise use of available resources is a continuous process. Just because you have radically redesigned a major business process, doesn't mean that you can sit back and not continue to improve the process. **BPR** coupled with a program of continuous improvements will put the organization in a very positive position when it comes time for budget justification.

Leadership

Top management are accountable for results and are therefore empowered to act with much discretion with respect to business process reengineering. Leadership is critical to the success of any **BPR** effort.

2.7 Major Components of BPR

Figure 2.4. **BPR** Components (Thomas 1995).

Strategic/Business Planning

Strategic planning provides a set of business goals and defined requirements which are expressed in terms of customer needs all within the context of mission,

vision, values and beliefs. A strategic plan defines what an organization is all about, who it will serve, what needs it will fulfill, and under what terms it will operate (values and beliefs). The strategic plan must be consistent with the constraints placed upon the organization by higher authority.

This means that no element of the strategic plan can conflict with the mission, vision, values and beliefs expressed by higher authority.

Business planning provides a set of business objectives with appropriate performance measurements, and a detailed, complete list of required output product and service features that will meet customer needs as defined in the strategic plan. It is important to understand that the business plan itself should not be concerned with identifying customers or customer requirements. That is the function of the strategic plan.

The business plan should focus on what the organization will do to satisfy the goals, needs and requirements expressed in the strategic plan. Also inherent in this aspect of planning is the identification and definition of information requirements necessary for proper development of automated information systems to support the organization's processes. This facet of BPR planning is known as Business Systems Planning (B SP).

Activity Modeling

Activity modeling is a technique which assists us in understanding how a business process really works. We use activity modeling to describe how things are (called AS-IS modeling), and also how we want them to be, based on our redesign criteria (called TO-BE modeling).

In activity modeling, we decompose a business process step-by-step into activities that make up the process. This results in a multi-level diagram that corresponds to the way we do work.

Data Modeling

Information is the glue that holds an organization together. Data modeling is a technique for accurately describing exactly what information you need to perform each and every activity that makes up the business process you perform.

As with activity modeling, we produce an "as-is" model, describing the current data environment, and then a "to-be" model showing what our data structures will need to be to support our redesigned processes.

A data model shows all of the entities (things or objects which an organization values enough to keep data about) you work with while performing an activity, the attributes (data items) of each entity, and the relationships between and among entities.

One of the results of data modeling is a clear delineation of business rules which are statements that constrain the way our function and its processes work.

The level at which you will be called upon to do data modeling is easily learned, even if you are not technically inclined. If you can write a functional procedure or design a simple form, you can successfully model data with the assistance of a facilitator.

Activity Based Costing

Activity-based costing (ABC) is a technique that allows us to determine the costs of producing our primary products and services. ABC is an extension of activity modeling and while it requires a fair amount of work to produce the numbers, it too is an easily learned technique.

Economic Analysis

Applying the principles of **BPR** to our organization's business processes will result in a slate of improvement opportunities. There will always be alternative means of implementing process improvements. Economic analysis gives us the capability to determine the costs and benefits associated with alternative investment opportunities, taking into account the life cycle characteristics of each investment. Economic analysis also presents the decision data in equally valued dollars (taking the time value of money into consideration), as well as the risks associated with making decisions about future conditions and performance.

Best Business Practices

Most top management carry around two questions about their areas of responsibilities:

Is this the best way to do it?; and, How does what **I** do compare to what others do who have the same responsibilities?

The first question can be answered by using the techniques of "Best Practice," the second question by the techniques of "Benchmarking." Both are outgrowths of the Total Quality Management (TQM) movement.

Functional Economic Analysis (FEA)

FEA is a methodology for analyzing and evaluating management practices and alternative process improvements and investments. It provides a framework for exploring alternative opportunities for improving business processes based on sound business case practices.

An FEA and the traditional economic analysis (EA) are similar. Both evaluate the economic feasibility of a project using classic economic analysis techniques. T4e primary difference between them is scope. An EA usually covers a single initiative or

information system while an FEA has a broader scope, usually covering duties assigned to a group of organizations or individuals that work together to produce a common product or service.

2.8 The Principles of BPR

According to Hammer, the most powerful think tank of BPR, reengineering involves certain principles for analyzing and dramatically reorganizing business as a system. The following are six key principles:

(1) Organize business process around outcomes, not tasks.

(2) Assign those who use the output to perform the process.

(3) Integrate information processing into the work that produces the data.

(4) Create a virtual enterprise by treating geographically distributed resources as though they were centralized.

(5) Like parallel activities instead of integrating their results.

(6) Have the people who do the work make all the decisions, and let controls built into the system monitor the process.

2.9 BPR-the Concept of Process Management

Every business process or sub- process exists to provide a needed product or service for a defined customer. These products and services are produced within the process according to defined requirements, rules, or constraints. The process requires materials and information which are provided by suppliers and consumes the resources allocated to the process.

When you hear the terms "downsizing" or "restructuring" on the evening news, or read about them in the morning paper, you are learning about companies that are moving toward process management and away from hierarchical management. Process management includes a lot of concepts you are becoming familiar with: Total Quality

Management (TQM) or Continuous Process Improvement (CPI), Self Managed Teams, Business Reengineering, and High-Performance Companies. Every one of these aspects of organizational enhancement starts with the concept of the "business process."

So, what is Process Management?

The hierarchial (vertical) organization served the needs of industrial age organizations well. The arranging of work into like functions was suited to the needs of an uneducated workforce. It simplified employee supervision and training, maximized managerial span of control, and had little dependence on the free flow of information.

However, a new model is needed for information age organizations. Work can be organized and managed as an end-to-end process, rather than as the sum of disjointed functions. Once the concept of process management is firmly rooted in the enterprise, it becomes possible to see real and lasting improvements in process performance. Outside a framework of process management, process reengineering efforts have little chance of lasting success.

Hence, what is process management? Why is this concept essential for real and lasting improvements in process performance? To begin to answer these questions we need to first give a working definition of process management. It can be defined as:

A philosophy of management that advocates an integrated approach to the management of an end-to-end process, including its lower level activities, which produces a product or service for a given customer.

This concept goes beyond organization structures. It encompasses everything necessary to identify, produce, and deliver a quality product or service to a fully satisfied customer. When an organization chooses to manage by process, the organization's structure and rules are no longer the focus of its efforts. The total satisfaction of the customer becomes the reason for the organization to exist.

Performance is now measured by how well the product or service is received by the customer, not how well one activity within the process performed.

Another aspect of this management philosophy deals with the idea of managing the mission versus managing the organization. Simply stated, if the process directly supports the mission of the organization, then by managing the process, you are, in turn, managing the mission. Too many organizations spend too much time managing the rules of the organization. They give little attention to the process by which the mission is being accomplished or the products and services being produced. By incorporating the philosophy of process management, the mission (the success of which is measured by satisfying the customer) becomes the emphasis as opposed to whether or not the organization is being managed.

2.10 The Evolution of Process Management

Basic Process Model

In its simplest terms, a process is a set of decisions and activities that are performed to transform a defined input into a defined output. In other words, it defines the flow of work through an organization beginning with an external input and ending with an external output. See Figure 2.4.

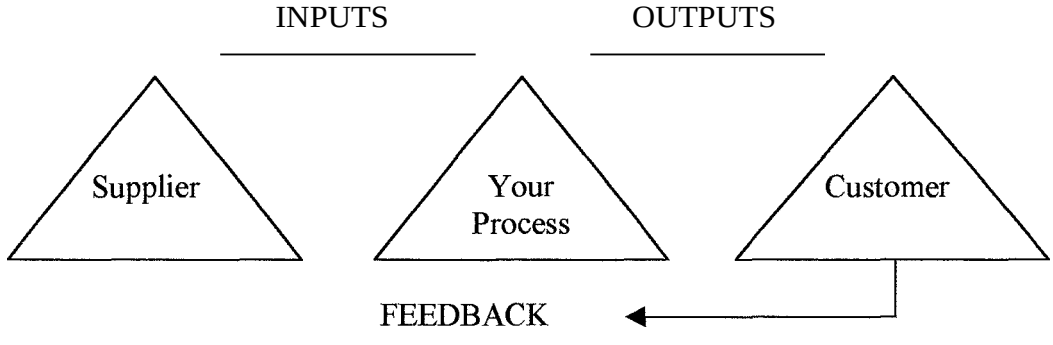

Figure 2.5. Basic Process Model (Hasin 1995).

The Basic Systems Model

The Basic Systems Model describes the interrelationships between sub-processes (or activities), which together, produce a product or service for a pre-defined customer. It is at this level that many organizations spend most of their time trying to improve. But instead of assessing the performance of the "system" as a whole, they key in on a single activity. When this is done without regard to the whole system, many times the improvement in the performance of a single activity may decrease the performance of the overall system.

The Process Management Model

The culmination of the evolution of the process is the Process Management Model; the five parts of the model:

(1) the mission (which is the reason the organization exists)

(2) the customer (who the organization serves)

(3) the product (what the organization produces for the customer)

(4) the process (the activities and decisions that are performed in the development of the product), and finally

(5) an information infrastructure (the management of information flow)

The concept is really very simple. If an organization doesn't have customers, they do not have a product. If they don't have a product, they won't need a process to produce the product. If they don't have the need for the process, eliminate it. Of course this is all taken in the context of the mission of the organization, which defines the reason we exist.

Levels of Process Improvement

Another way to look at a business process is that it is a group of interrelated tasks and activities that accomplish a defined goal or mission of an enterprise. By this

definition, even the largest organizations have no more than five or six core business processes

Let's look at three aspects of process improvement:

(1) New Process Design

(2) Process Redesign (Reengineering)

(3) Continuous Process Improvement

New Process Design

New process design is performed based on a change of mission, strategic or business plan. New process design would be required if a previously out-sourced function was brought in-house. The distinguishing characteristic of new process design is that there is no baseline from which to work. Benchmarking can be critical to the success of a new process design effort.

Process Redesign

Process redesign (or reengineering) on a significant change in output product and service requirements, a significant change in controls or constraints imposed on the business process or a significant change in the technological platform supporting the business process. A process redesign effort might also be undertaken following a radical change in financial resource availabilities (i.e. budget cuts or downsizing requirements).

Process redesign usually has significant impacts across organizational boundaries and generally has impacts or effects on external suppliers and customers. For this reason, the process reengineering team must be cross-functional, to include members from all impacted organizations. Process redesign can have impacts on the organizational structures supporting the business process. This means that reengineering teams must have the support and backing of senior leadership if improvement initiatives

are to be given frank consideration by review and approval agencies. So, how do we redesign our processes?

The first step is to identify your business processes by going directly to your mission statement and strategic plan. The need for each business process in your organization should be based on these documents.

Next, you identify your customers and suppliers. Your customers determine what products and services your processes should provide. Your suppliers provide the raw materials and components your process will use in building your products and services.

Then you analyze all of the activities that take place in your process that are in the value- chain between what you get from your suppliers and what you deliver to your customers. Those activities that add value to your products and services are strengthened and optimized. Those activities that do not add value are reduced or eliminated. Later, we will take a more detailed look at the step- by- step methodology that we use to do this.

Continuous Process Improvement

Process improvement (Continuous Process Improvement [CPI]) actions are defined as those improvements which can be undertaken and supported by an organization with minimal impact on external suppliers, customers and other organizations within the functional area.

The focus of this level of process improvement is an emphasis on reducing the overhead associated with self-imposed controls and restrictions, eliminating non- value added activities, reducing non- value added costs, optimizing available resources with respect to process and activity output requirements, and other improvements that can be made within the authority level of the target organizational element.

2.11 BPR vs. Other Quality Management Concepts

Business Process Reengineering depicts a different concept against other quality management ideas such as Continuous Process Improvement, Total Quality Improvement, etc. However, quality programs and reengineering share a number of common themes. They both recognize the importance of processes and look into the needs of the customers.

They differ fundamentally (Sheikh 1999). The first work within the framework of an organization's current processes and seek to enhance them by means of the Japanese thinking, the Kaizen or widely known as continuous incremental improvement. The objective is to do what is existing but do it better. Quality improvement seeks steady incremental improvements to process performance. On the other hands, reengineering quests for breakthrough, not by enhancing existing processes but rather to disregard them and replace with entirely new ones. Reengineering involves, as well, a different approach to change management from that needed by quality programs (Chase and Aguilano 1995).

Hiatt (1998) gave illustrative comparison of BPR model and Continuous Process Improvement model since many have mistakenly interchange the two concepts. Figure 2.6 and Figure 2.7 showed such models.

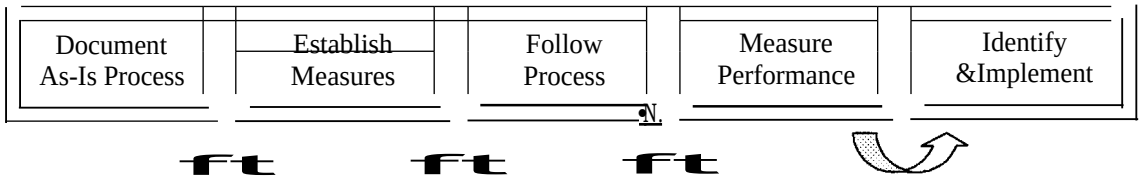

Figure 2.6. Continuous Process Improvement Model (Hiatt 1998).

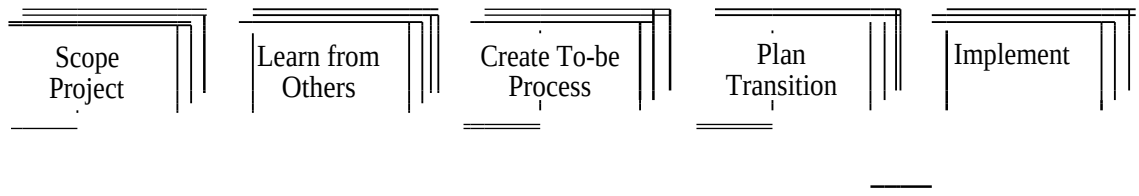

Figure 2.7. Breakthrough Reengineering Model (Hiatt 1998).

Continuous Process improvement is effective in obtaining gradual, incremental improvement. However, over the last 10 years several factors have accelerated the need to improve business processes dramatically. Hence, companies shifted and explored the idea of BPR. As defined earlier, BPR focused much on fundamental rethinking and radical design processes to achieve dramatic improvements.

Davenport (1993) noted that quality management, often referred as total quality management (TQM) or continuous improvement, pertains to programs and initiatives that emphasize incremental changes in work processes and outputs over an open-ended period of time. On the contrary, reengineering also known as business process redesign or process innovation, refer to discrete initiatives that are intended to achieve a radically redesigned and improved work processes in a bounded time frame. A summary of the differences of the two concepts is given in Table 2.1.

Table 2.1. Process Improvement vs. Process Reengineering (Davenport 1993).

	Improvement	**Reengineering**
Level of Change	Incremental	Radical
Starting Point	Existing Process	Clean slate
Frequency of Change	One-time/Continuous	One-time
Time Required	Short	Long
Participation	Bottom-up	Top-down
Typical Scope	Narrow, within functions	Broad, cross-functional
Risk	Moderate	High
Primary Enabler	Statistical Control	Information Technology
Type of Change	Cultural	Cultural/Structural

2.12 Relationship between BPR and Information Technology

Hammer (1990) considers IT as the key enabler of BPR that he considers as "radical change." He prescribes that use of IT to challenge the assumptions inherent in the work processes that have existed since long before the advent of modern computer and communication technology. He argues that at the heart of reengineering is the notion of "discontinuous thinking — or recognizing and breaking away from the outdated rules and fundamental assumptions about technology, people and organizational goals that no longer hold."

Davenport and Short (1990) argue that BPR requires taking a broader view of both IT and business activity, and of the relationships between them. It, according to them, should be viewed as more than an automating or mechanizing force; to fundamentally reshape the way business is done.

Business activities should be viewed as more than a collection of individual or even functional tasks; in a process view for maximizing effectiveness. IT and BPR have recursive relationship. IT capabilities should support business processes and business processes should be in terms of the capabilities IT can provide. Davenport and Short (1990) refer to this broadened, recursive view of IT and BPR as the new industrial engineering.

Business processes represent a new approach to coordination across the firm; It's promise — and its ultimate impact — is to be the most powerful toll for reducing the costs of coordination (Davenport & Short, 1990). The two authors further outline the following capabilities that reflect the roles that IT can play in BPR; Transactional, Geographical, Automatical, Informational, Sequential, Knowledge Management, Tracking and Disintermediation.

In 1994, Teng et. al argue that the way related functions participate in a process — i.e. the functional coupling of a process — can be differentiated along two dimensions; degree of mediation and degree of collaboration. They define the Degree of Mediation of the process as the extent of sequential flow of input and output among participating functions. They define the Degree of Collaboration of the process as the extent of information exchange and mutual adjustment among functions when participating in the same process. In their constructed framework, Information Technology (IT) is instrumental in reducing the Degree of Mediation and enhancing the Degree of Collaboration. Also, innovative uses of IT would inevitably lead many firms to develop new, coordination-intensive structures, enabling them to coordinate their activities in ways that were not possible before. Such coordination- intensive structures may raise the organization's capabilities and responsiveness to potential strategic advantage.

2.13 Some Revisited Models and Developed Methodologies

There is no specific methodology or steps in conducting **BPR** since the approach will be based on the project or company's requirements and capacities.

Hiatt (1993) reviewed various literatures on BPR and consolidated the methodologies gathered. He was able to come up with four (4) methodologies. It could be observed that there are common attributes among the methodologies discussed.

Reengineering Methodology 1

(1) Describe the project (establish boundaries)

(2) Create vision, values and objectives

(3) Redesign business processes and tools (model)

(4) Evaluate concept (benefits statement)

(5) Plan for implementing the solution

(6) Implement the redesign

(7) Transition to continuous process improvement (measure results)

The above method, overall is very strong but lacks a learning process prior to vision creation. However, it has a real strength with the presence of transition to a continuous improvement model.

Reengineering Methodology 2

(1) Define the project

(2) Document as-is processes (diagnose)

(3) Redesign business processes and technology

(4) Develop a cost/benefit analysis

(5) Plan and implement new processes and systems

(6) Evaluate process performance

Methodology 2 indicated documentation of current processes that is time consuming and valuable to the working team as the starting point. It also lacks a vision as the basis of the redesign work.

Reengineering Methodology 3

(1) Create project prospectus (define project)

(2) Learn from others (customers, associates, benchmarking, technology)

(3) Create vision and design new business process model

(4) Develop enabling technology architecture and organizational model

(5) Perform a gap analysis and prepare a business case for change

Considered as a very strong method, methodology 3 however, excludes the transition to continuous improvement model.

Reengineering Methodology 4

(1) Define the project and identify team

(2) Brainstorm new processes and technologies

(3) Analyze and prioritize opportunities (benefit analysis)

(4) Select "best" opportunity and design solution

(5) Develop and trial new processes, information systems and enabling tools

(6) Plan transition and implement solution

Method 4 would be significantly faster than the other methods enumerated but will result in a non-long lasting business output.

Davenport and Short (1990) prescribe a five-step approach of BPR namely:

(1) Develop the business vision and process objective

(2) Identify the process to be redesigned

(3) Understand and measure the existing process

(4) Identify IT level

(4) Identify IT level

(5) Design and build a prototype of the new process

Nick (1994) showed the so-called four steps to BPR. Figure 2.8 illustrates his methodology.

An almost similar methodology was developed and presented by Cobra (1993) in his research work entitled Constrains and opportunities in Business Restructuring — An Analysis. He designed the six-steps method to complement other approaches. See Figure 2.9.

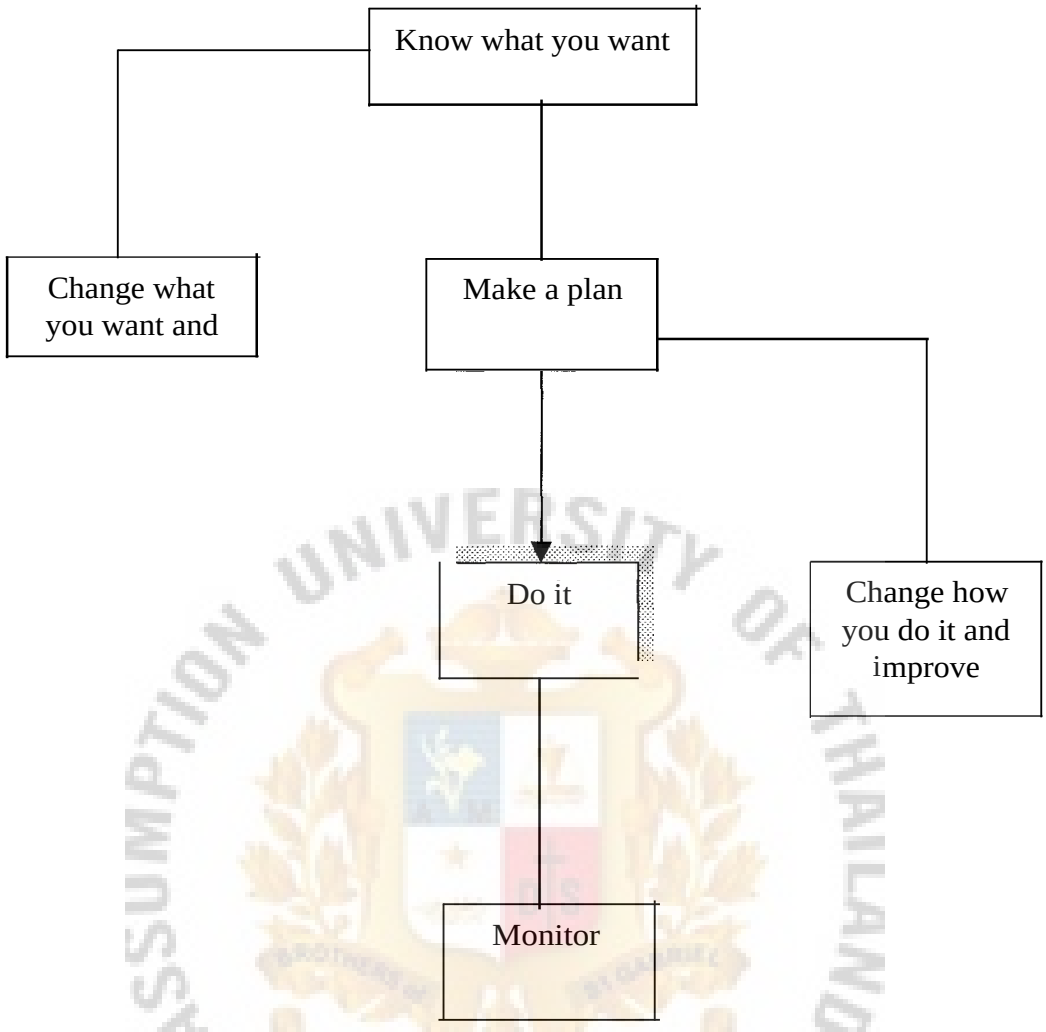

Figure 2.8. Nick's BPR Four-Step Methodology (Nick 1994).

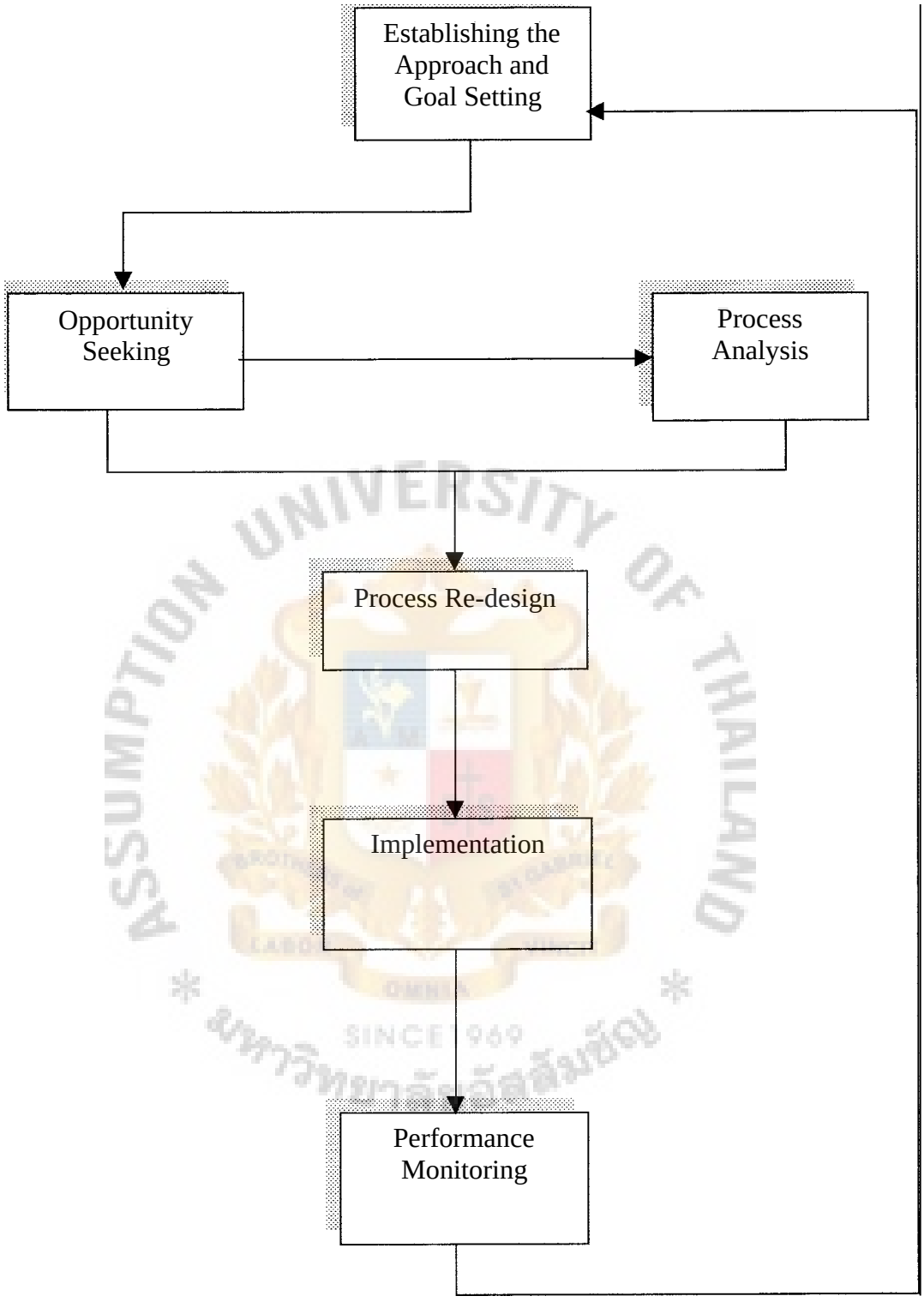

Figure 2.9. The Six-Steps BPR Methodology (Cobra 1993).

2.14 BPR Success Factors

More than half of early reengineering projects failed to be completed or did not achieve bottom-line business results, and for this reason business process reengineering "success factors" have become an important area of study. The success factors below are derived from benchmarking studies with more than 150 companies over a 24 month period.

Success factors are a collection of lessons learned from reengineering projects. Reengineering team members and consultants that have struggled to make their projects successful often say, "If I had it to do over again, I would". These include:

(1) Top Management Sponsorship (strong and consistent involvement)

(2) Strategic Alignment (with company strategic direction)

(3) Compelling Business Case for Change (with measurable objectives)

(4) Proven Methodology (that includes a vision process)

(5) Effective Change Management (address cultural transformation)

(6) Line Ownership (pair ownership with accountability)

(7) Reengineering Team Composition (in both breadth and knowledge)

Top Management Sponsorship

Major business process change typically affects processes, technology, job roles and culture in the workplace. Significant changes to even one of these areas requires resources, money, and leadership. Changing them simultaneously is an extraordinary task. If top management does not provide strong and consistent support, most likely one of these three elements (money, resources, or leadership) will not be present over the life of the project, severely crippling your chances for success.

It may be true that consultants and reengineering managers give this topic a lot of attention. Mostly because current models of re-designing business processes use staff

functions and consultants as change agents, and often the targeted organizations are not inviting the change. Without top management sponsorship, implementation efforts can be strongly resisted and ineffective.

Top management support for large companies with corporate staff organizations has another dimension. If the top management in the "line" organization and "staff' organization do not partner and become equal stakeholders in the change, and you only have staff management support, you most likely are ill-prepared for a successful reengineering project (line management in this context are the top managers of the operation ultimately accountable for business performance -- P&L, customer service, etc.). Projects that result in major change in an organization rarely succeed without top management support in the line organization.

Strategic Alignment

You should be able to tie your reengineering project goals back to key business objectives and the overall strategic direction for the organization. This linkage should show the thread from the top down, so each person can easily connect the overall business direction with your reengineering effort. You should be able to demonstrate this alignment from the perspective of financial performance, customer service, associate (employee) value, and the vision for the organization.

Reengineering projects not in alignment with the company's strategic direction can be counterproductive. It is not unthinkable that an organization may make significant investments in an area that is not a core competency for the company, and later this capability be outsourced. Such reengineering initiatives are wasteful and steal resources from other strategic projects.

Moreover, without strategic alignment your key stakeholders and sponsors may find themselves unable to provide the level of support you need in terms of money and

resources, especially if there are other projects more critical to the future of the business, and more aligned with the strategic direction.

Business Case for Change

In one page or less you must be able to communicate the business case for change. Less is preferred. If it requires more than this, you either don't understand the problem or you don't understand your customers.

You may find your first attempt at the business case is 100 pages of text, with an associated presentation of another 50 view graphs (overhead slides). After giving the business case 20 times you find out that you can articulate the need for change in 2 minutes and 3 or 4 paragraphs. Stick with the shorter version.

Why is this important? First, your project is not the center of the universe. People have other important things to do, too. Second, you must make this case over and over again throughout the project and during implementation - the simpler and shorter it is, the more understandable and compelling your case will be.

Cover the few critical points. Talk to the current state, and what impact this condition has on customers, associates and business results. State the drivers that are causing this condition to occur. State what you are going to do about it (vision and plan), and make specific commitments. Keep focusing on the customer. Connect this plan to specific, measurable objectives related to customers, associates, business results, and strategic direction. Show how much time and money you need and when you expect to get it back. Don't sell past the close. No matter how long you talk, you will get resistance from some, and support from others, so you might as well keep it short.

The business case for change will remain the center piece that defines your project, and should be a living document that the reengineering team uses to demonstrate success. Financial pay back and real customer impact from major change

initiatives are difficult to measure and more difficult to obtain; without a rigorous business case both are unlikely.

Proven Methodology

The previous module presented several **BPR** methodologies, and it is important to note that your methodology does matter. Seat-of-the-pants reengineering is just too risky given the size of the investment and impact these projects have on processes and people.

Not only should your team members understand reengineering, they should know how to go about it. In short, you need an approach that will meet the needs of your project and one that the team understands and supports.

Change Management

One of the most overlooked obstacles to successful project implementation is resistance from those whom implementers believe will benefit the most. Most projects underestimate the cultural impact of major process and structural change, and as a result do not achieve the full potential of their change effort.

Change is not an event, despite our many attempts to call folks together and have a meeting to make change happen. Change management is the discipline of managing change as a process, with due consideration that we are people, not programmable machines. It is about leadership with open, honest and frequent communication.

It must be OK to show resistance, to surface issues, and to be afraid of change. Organizations do not change. People change, one at a time. The better you manage the change, the less pain you will have during the transition, and your impact on work productivity will be minimized.

Line Ownership

Many re-design teams are the SWAT type -- senior management responding to crisis in line operations with external consultants or their own staff. It's a rescue operation. Unfortunately the ability of external consultants to implement significant change in an organization is small. The chances are only slightly better for staff groups. Ultimately the solution and results come back to those accountable for day-to-day execution.

That does not mean that consultants or staff are not valuable. What it does mean, though, is that the terms of engagement and accountability must be clear. The ownership must ultimately rest with the line operation, whether it be manufacturing, customer service, logistics, sales, etc.

This is where it gets messy. Often those closest to the problem can't even see it. They seem hardly in a position to implement radical change. They are, in a matter of speaking, the reason you're in this fix to begin with. They lack objectivity, external focus, technical re-design knowledge, and money.

On the other hand, they know today's processes, they know the gaps and issues, they have front-line, in-your-face experience. They are real. The customers work with them, not your consultants and staff personnel.

Hence your dilemma. The line operation probably cannot heal itself when it comes to major business re-design. Staff and consultants have no lasting accountability for the solution, and never succeed at forcing solutions on line organizations.

You need both. You need the line organization to have the awareness that they need help, to contribute their knowledge, and to own the solution and implementation. At the same time you need the expertise and objectivity from outside of the organization.

Building this partnership is the responsibility of the line organization, stakeholders and re-design team. No group is off the hook.

Reengineering Team Composition

The reengineering team composition should be a mixed bag. For example

(1) some members who don't know the process at all

(2) some members that know the process inside-out

(3) include customers if you can

(4) some members representing impacted organizations

(5) one or two technology gums

(6) each person your best and brightest, passionate and committed

(7) some members from outside of your company

Moreover, keep the team under 10 players. If you are finding this difficult, give back some of the "representative" members. Not every organization should or needs to be represented on the initial core team. If you fail to keep the team a manageable size, you will find the entire process much more difficult to execute effectively.

Hiatt also mentioned some benefits of business process reengineering namely:

(1) Revolutionary thinking. It encourages organization to abandon traditional approaches to problem that is "think big."

(2) Breakthrough improvement. It helps organization make noticeable changes in the pace and quality of the response to customer needs

(3) Organizational structure. It helps the organization to identify real customer needs, rather than create products that ignore the need and wants to the customers.

(4) Organizational general. It seems in new organizational designs that help companies respond better to competitive pressures, increase market share and profitability, and improve times, cost rations and quality.

(5) Corporate culture. It helps the culture of the organization to achieve change and know now to deal with it.

(6) Job redesign. It helps create more challenging and more rewarding jobs with broader responsibilities for employees.

M. METHODOLOGY AND FRAMEWORK OF THE STUDY

A business process methodology is a complete life cycle approach to identify and implement business process infrastructure support redesigns for business processes of a company.

For purpose of this project, BPR is defined as "the rapid and radical redesign of strategic, value-added business process, systems and organizational structures."

The recent surge of interest in BPR has not yet fully manifested itself in academic journals, though this is likely to happen progressively as the principles behind it and the associated issues become better understood. There has; however, been a proliferation of literature in both the press and informative journals. To further strengthen the claims and approach in this study, various major articles and studies were reviewed. Many of these articles and studies gave full packed information of business process reengineering, successes and failures and lessons learned by companies who experienced the radical change. Some are general articles which grapple with the principles of BPR and focus particular aspects. Various methodologies were also reviewed.

A reengineering methodology was designed and developed only for the purpose of this project. A systematic design approach was considered rather than clean sheet approach.

(1) Systematic design — includes the identification and understanding of existing process then work through them systematically to create new processes to deliver the desired outcomes.

(2) Clean sheet approach — fundamentally re-thinking the way that the product or service is delivered and design new processes from scratch.

Figure 3.1 shows the framework of the BPR methodology designed and constructed for the purpose of this project. The methodology consists of a number of elements. A central "thread" considered as the core elements consists of initiating the program, scoping the program, redesigning processes, systems or organization structure and finally implementation or roll-out. Just as important; however, are elements which support the program from its initiation through implementation. These include integration of the redesign process and sustaining commitment of the organization for the radical change.

However, the details of the implementation process was not included due to time constraints but implementation strategies for roll-out and supporting elements were considered in the recommendation section. Detailed discussion for each elements were given on the next chapter.

IV. THE REENGINEERING SCENARIO

In 2001, Pathommongkol Market is driven back to the real owners. They are looking forward to change the organization operates. The focus of their target is on the operation in collecting procedures.

The changes in its business processes should be done quickly in order to be in track with the competition. Top management have identified important elements that will help their staffs achieve aims in the business, add value to the company as well as meet customer satisfaction, namely:

(1) A complete challenge to the existing situation

(2) Radical redesign

(3) Drastic improvement

(4) Alignment with corporate strategy, vision and spirit

All of the above identified elements are pertaining to reengineering. As many researchers claimed, **BPR** is less well understand, but potentially more effective. Also, there are few proven guidelines for determining when **BPR** is appropriate and its success varies from one company to another. As stated before, one of the objectives of this project study is to contribute to the knowledge base enabling reengineering to be more effectively applied.

The top management of Pathommomgkol Market (PM) view **BPR** as a quality management approach available based on the elements they have identified that will help them changed. Thus, the approach of this project study was conceptualized.

Fruit & vegetable Market has several processes involved, from customer application to service provisioning. Due to the existence of time constraint for this project study, three business processes were identified by a member of the top management for application of reengineering approach. The identification was based on

their criticality, range and scope of activities and business implication to the company. The following were the options indicated by the Vice PM Manager.

(1) Implementing common business processes

(2) Implementing a Collection System for PM

(3) Implementing a centralized bill printing process to customers

4.1 Structure of Pathommongkol Market

Pathommongkol Market (PM) is a central collection of agricultural product under supporting from Internal Trading Department. It is separated into two different sites depending on the type of agricultural product: Vegetable and Fruit market. Both of them have been faced under 5 year-free trade management by the groups of whole seller. The time period is illustrated in Table 4.1 That means all systems are set and managed by themselves. The owners can not take any participation in their management.

Table 4.1. Time Table for Free-trade Management (PM owner 2001).

Market / Time	**Start**	**End**
Vegetable	End of 1996	End of 2001
Fruit	Beginning of 1997	Beginning of 2002
Fish	Under Conditional agreement	
Chicken & Pork	Under Conditional agreement	

4.2 PM Collection Process Background

As mentioned above, free-trade condition means no charge from block-rent. However, it only has cleaning fee, which depends on the amount of product (Table 4.2).

Table 4.2. Cleaning Fee vs. Container Size (PM officer 2001).

Cleaning Fee	Container Size
5 baht	1 basket
10 baht	2-5
20 baht	> =6

Note: the dimension of a basket is similar to a cylinder shape with 80cm.in width and 90cm. in height.

Practically, the fee is not standardized because of the size of the container, the amount of product in baskets, and collecting staff decision. Consequently, the regular problems are the income is waving all the time (see Table 4.3), and customers have arguments over money.

Table 4.3. An Example of Cleaning Fee in August 1998 (PM officer 2001).

Date	**1**	**3**	**5**	**7**	**9**	**11**	**13**	**15**	**19**	**21**	**23**	**25**	**27**	**29**
Total fee	9785	9545	963	9560	9780	9985	9530	9665	9750	9770	9930	9825	9675	9885

Date	**2**	**4**	**6**	**8**	**10**	**12**	**14**	**16**	**20**	22	**24**	**26**	**28**	**30**
Total fee	9285	9185	9355	9840	9480	9275	9470	9615	9220	9740	9390	9715	9555	9485

Moreover, they employ a group of collecting staff who comes from the same local area. It has two sharp of knife, namely, they can easily be a unity team to work the best for the organization. On the other hand, if one of them do some thing wrong against an office regulation, the others might be on his side.

Figure 4.1 is illustrated the current process.

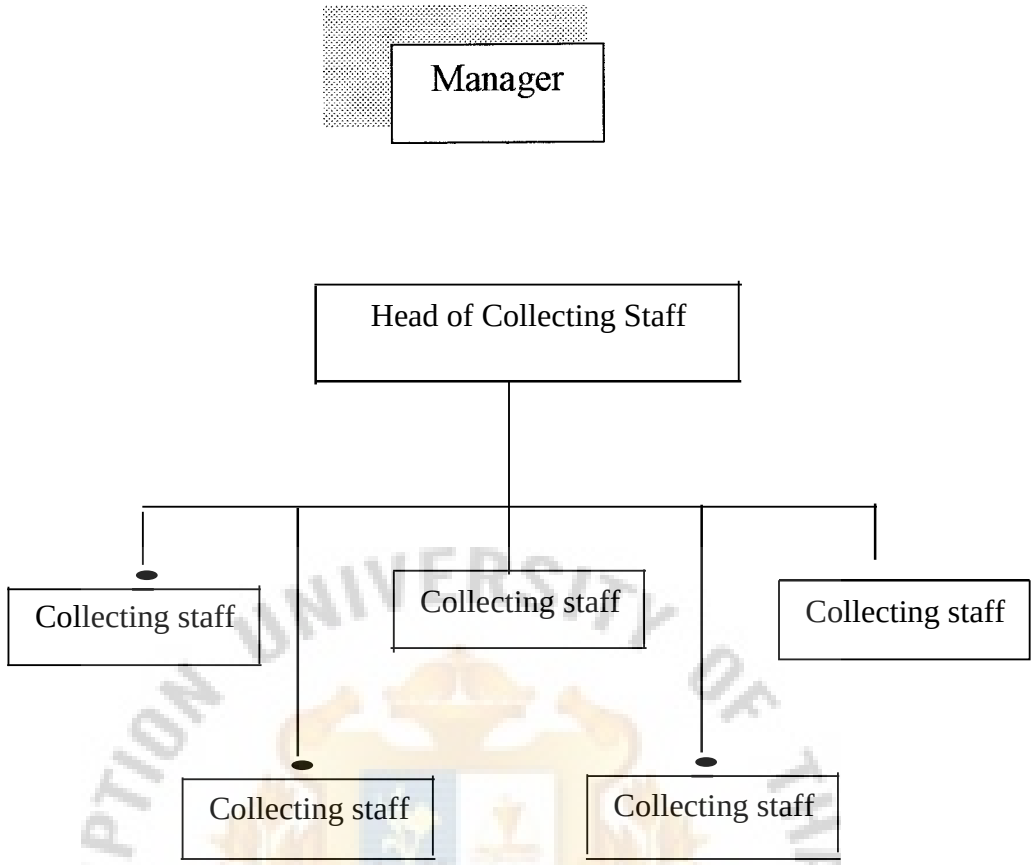

Figure 4.1. The Current Process (PM employees' manual 1998).

4.3 Initiate Reengineering Project

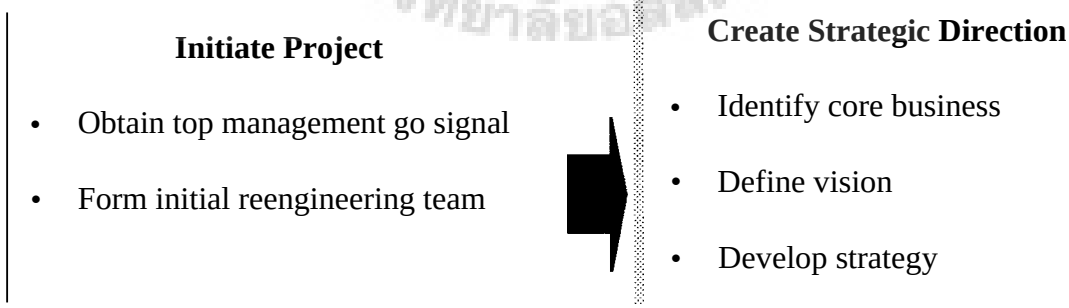

Figure 4.2. Initiate Reengineering Step.

If an organization wishes to change the way it operates, it must turn to its people to make it happen. People are the agents of change. Creating business plans and strategies are important, but they are only tools to guide the actions of people.

Because BPR can potentially require significant changes throughout an organization, it must begin with a communications campaign to educate all those who will be impacted by this change. Communication to all levels of personnel must remain active from start to finish to keep everyone involved and working towards a common goal. Without a common understanding about what is happening, confusion and uncertainty about the future can result in resistance strong enough to stop any reengineering effort. BPR is most effective when everyone understands the need for change, and works together to tear down old business systems and build new ones.

In order for change to be embraced, everyone must understand where the organization is today, why the organization needs to change, and where the organization needs to be in order to survive.

4.3.1 Initiate Reengineering Project

The reengineering effort is likely to be instigated by one or more members of the top management. It is essential as this stage that top level management understand the concepts and principles of reengineering, the change the organization is likely to experience and what specifically is required of them.

A high-level management team should now be formed. The overall head of this team must have authority over all traditional functions within the organization so that the new processes crossing functional boundaries can be designed and implemented. Other members of the team must also have the authority to make the project succeed with enough expertise on their field of assignment. All team members must agree on the

need for change, fully accept the concepts behind reengineering and behave in the potential for success.

In the early part of this project study, it was mentioned that the member of the top management initiated the idea of radical change, staying competitive in the business, a complete challenge in the existing situation, etc. which are all elements of a reengineering approach.

Figure 4.3 shows the high level management team that is suggested to handle the implementation of the project. However, it may be enhanced depending on the organizational setup of the company upon implementation of this project study. The team is headed overall by the vice PM manager who must have an authority overall functional areas that will cover the collection processes. Consultants can be external or internal staff who have enough expertise on reengineering.

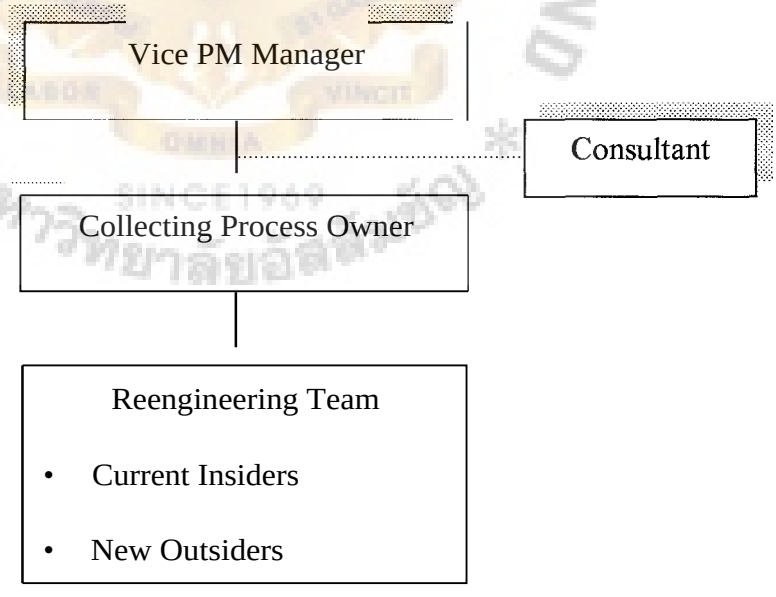

Figure 4.3. High Level Reengineering Team.

Vice PM Manager has the authority to make people listen and the motivational power to make people follow.

Collecting Process owner is responsible for a collecting process and the reengineering effort focused on it. Allocating the responsibility of a process to a specific person ensures that source is in charge of how that process performs. Moreover, he has to convene a reengineering team to actually process.

Reengineering team of PM is made up of two groups-current insiders and outsiders. Current insiders come from the old collecting staffs who perform the current process and are aware of its strengths and weaknesses. On the other hand, outsiders are a group of new staffs who provide objective inputs to spark creative ideas for redesign.

Consultant can be a reengineering specialist. He can assist our reengineering team by providing tools, techniques, and methods to help them with their reengineering tasks.

4.3.2 Create Strategic Direction

Core business of the existing and future system must be identified. Vision and strategy can then be redefined if already exists. Visions vary from one organization to another depending on the type of business or environment. However, the information of this strategy is essential, since it enables the scope and objectives of the reengineering program to be defined.

Pathommongkol Market has vision to be the leader in the provision of a full range of fruit-vegetable market throughout the central region of Thailand for the next millenium with the spirit of:

(1) Customer focus

(2) Its employees as strength

(3) Service not tomorrow but today

(4) Leadership

With the above vision and spirits the company would then like to explore the application of reengineering to its various business processes.

This project study covers the application of **BPR** methodology in collection process in PM with the assumption that the result will be in response to the existing business requirements identified. Specifically, the approach would like to aim the following:

(1) to apply an appropriate and flexible collection treatment plan for customer

(2) to enable collecting staff to be more efficient in their collection effort

(3) to meet the 100% collection target everyday

(4) to identify, monitor, control delinquent fee

4.4 Scope of the Project

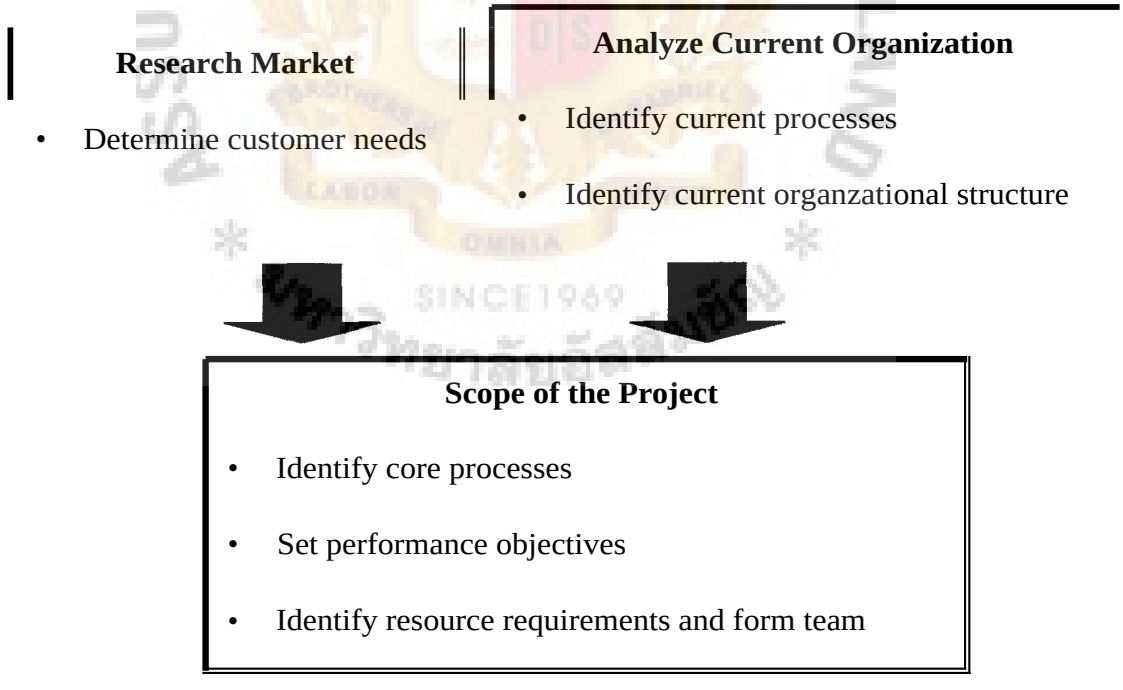

Figure 4.4. Scope of the Project.

4.4.1 Research Market

Understanding customer needs is key to the success of the program. Market research can be conducted to ascertain "customers" opinion of the organization's product and services portfolio and how it can be improved.

Due to the limited time allotted to this project study, it was then analyzed that a survey would be infeasible to conduct for over 1,000 customers of PM. A sampling scheme, strategy and data retrieval will require more time for the author. Thus, secondary data were used. The output of the 1998 survey conducted by PM officer was used to determined the current status of the company. Table 4.4 is shown the requirement of customers.

Customers' Requirement

1. They need a permanent block-area.
2. They ask for dividing area in zoning
3. They want to pay fee in advance without everyday trouble collecting process.
4. They need to be the member of PM.

Figure 4.5. Customers' Requirement (PM database 2000).

In the competitive world of business, how fast, how clear, how efficient and how effective are the systems in a company can make or break a deal.

4.4.2 Analysis of Current Organization

Core processes of an organization were identified in the "initiative reengineering project." These processes must be clearly understood. This can be performed through actual and written review of the existing process.

Now that we know which process to reengineer, we need to take a look at why we currently perform the process the way we do. What we need to do is understand the underlying reasons why the existing process is carried out the way it is, so that we can question those assumptions during our reengineering sessions later on. When we have the new process objectives clearly defined, we can measure our existing process in terms of the new objectives to see where we are and how far we have to go.

Modeling the current process is an important part of this phase. It not only helps us to better understand the existing process, but also helps with planning the migration from the old to the new process. See Figure 4.1.

At the present, PM collecting processes have only four collecting staffs and one re- check collecting to operate the whole by using ticket system. One ticket is comprised of three parts which run with the same number; the first one for customer, the second one for re-check collection, and the last one for financial department. One important notice is that four collecting staffs are placed in different areas, but they always work at the same place. This method is an easy way for them to keep in touch with their customers, but they cheat for no fee collecting.

4.4.2 Scope of the Project

The determination of customer needs, understanding of existing processes will enable the reengineering of the core processes to be prioritized. The performance goals for these processes will then be determined. This is important since these goals will "drive" the reengineering effort. They must therefore be ambitious but achievable. They

should also accurate reflect the true objectives of the organization identified from market research.

The reengineering effort applied to collection process would like to achieve the following that will meet the customer business requirements as well as increase company's revenue.

(1) to increase the efficiency and effectivity of collection process.

(2) to apply an appropriate and flexible treatment plan to each customer.

(3) to build a collection database for profiling of customer base.

(4) to reduce/eliminate manual processes.

(5) to reduce lead time for the collection process.

(6) to identify, monitor and control delinquent fee.

(7) to reduce fraud or risk on undisputed fee.

Also, at this stage, performance measures are conceptualized. Process management relies on feedback to evaluate and improve process performance.

4.4 Redesign Processes, Systems and Organizational Structure

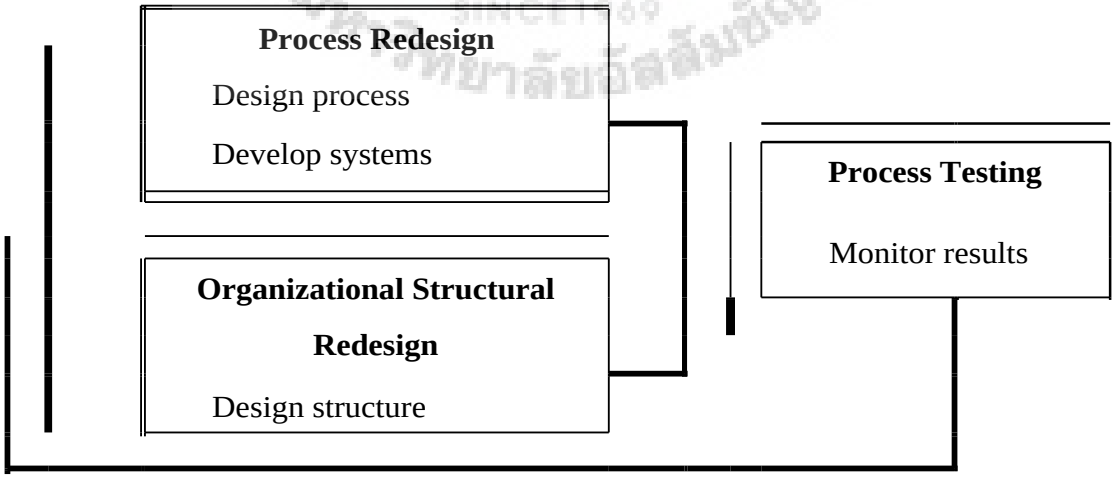

Figure 4.6. Redesign Processes, Systems and Organizational Structure.

During this phase, the actual "reengineering" begins. We've moved from strategy and analysis phases into the redesign phase. The Reengineering Team that was formed to take part in the reengineering sessions should consist of designers and implementers, including people well versed in technology. These team members should come from both inside and outside the existing process.

The "inside" perspective may reveal information about the existing process that was not uncovered in Phase 4. Having people who will be the future process owners, or those responsible for the new process, is a critical component of the Team. Including the future owners will help to ensure that the reengineered process succeeds once it is implemented.

Equally important is the "outside" perspective of someone who will look at the process with a "fresh eye" and raise questions about operating assumptions that may not be obvious to the insider who might be too close to the process to see this.

The reengineering team is now tasked with brainstorming to create new process ideas. According to Hammer, brainstorming sessions are most successful when BPR principles are considered, for examples:

(1) Several jobs are combined into one

(2) Workers make decisions

(3) The steps in a process are performed in a natural order

(4) Work is performed where it makes the most sense

(5) Reconciliation is minimized

The reengineering team should also search for uses of new information as well as new ways to use existing information. The reengineered process may enable the organization to collect data that was not gathered before, thereby bringing new knowledge into the process to help in decision making. Another benefit is the sharing of

data across the organization to eliminate redundancies in data storage and increase internal communication.

4.5.1 Process Redesign

Processes must be redesigned with customer needs as the starting point. The objective of the process is to facilitate the provision of customers which meet their requirements as determined by market research. The focus of the process is always the outcome, not the tasks of which it is comprised.

Pathommongkol Market (PM) in part of vegetable market is separated to nine (9) buildings See Appendix C. Each building should be permanently divided into different block size depending on the kind of agricultural product and the type of customers' business; for instance: food, drinking shop, convenience shop, etc. Table 4.4 illustrated the number of different block-size in each building.

Table 4.4. The Number of Different Block-Size in Each Building (PM officer 2001).

Building NO.	**The Number of Block**				
	2.30*2.50m.	2.50*2.50m.	3.00*5.00m.	2.50*5.80m.	2.50*6.30m.
1	26	-	13	6	32
2	30	60	15	-	-
3	18	-	9	4	2
4	-	-	-	64	-
5	-	-	-	60	-
6	-	-	-	44	-
7	32	-	16	-	32
8	-	-	15	30	30
9	54	-	11	6	-

From above table, each block size is set up for different of customers' groups. See in Table 4.5.

Table 4.5. Block Size vs Groups of Customers (PM officer 2001).

Block Size	**Groups of Customers**
2.30 m.*2.50 m.	vegetable retailers, agricultural farmers
2.50 m.*2.50 m.	vegetable retailers, agricultural farmers
3.00 m.*5.00 m.	food & drink shops, convenience shops
2.50 m.*5.80 m.	whole sellers, open car sellers
2.50 m.*6.30 m.	whole sellers, open car sellers

In each block; moreover, it is identified by three different numbers, for instance, 145, 372, 609 etc. See Appendix D. The meaning is that the first number shows a number of the building, and the rest is the number of the block in that building. This way is easy to remember their position in PM and is convenient.

In addition, each block area has been occupied for a year by making a contract between Pathommongkol Market and each customer. Specially, after the customers make an agreement, they are automatically a member of PM.

4.5.2 Existing Collection System

The current collection system of Pathommongkol Market does not a have formal form. It applied 4-6 collecting staffs to directly call fee from customers. This system faced trouble, which is that they can not collect complete fees of all the customers. Because some customers have a few agricultural products, they finish their product before the collecting staffs reach them. Moreover, if the collecting staffs reach late, they can not certainly make a decision for fees with the reason that fees depend on the amount of product Table 4.2.

4.5.3 Redesigned System

Since Pathommongkol market has a thousand customers daily. It should have three means of collection, namely, directly collected by collecting staffs, from directly paid customers, and from re-collecting by other staffs. See Figure 4.6.

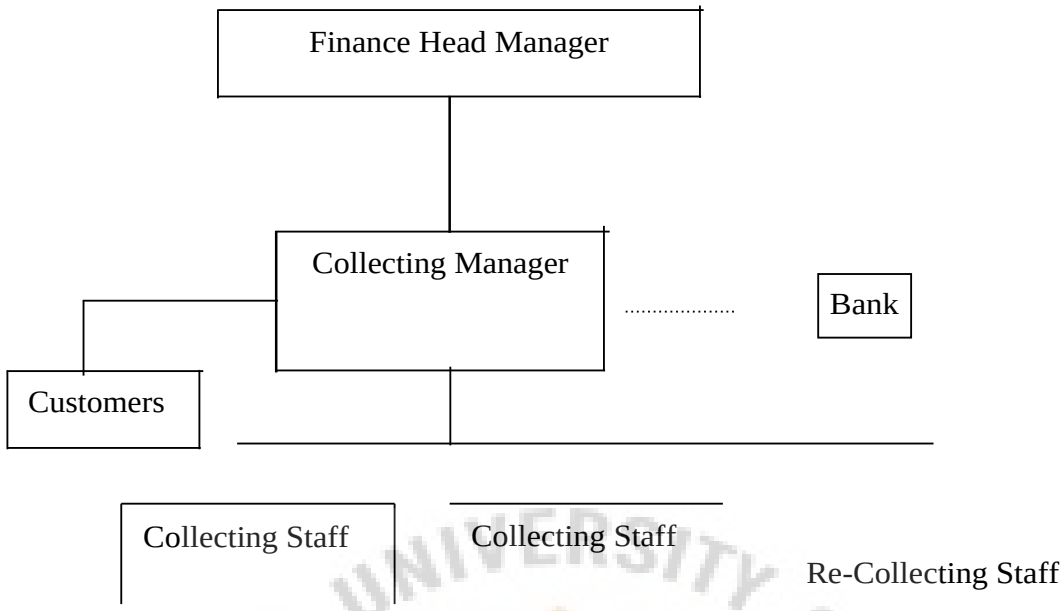

Figure 4.7. The Redesigned System.

Firstly, all the customers who select the block-area in the building must pay money monthly. The rent is identified by the size of block-area See Table 4.6.

Table 4.6. Block Size vs. Monthly Rent.

Block Size	**Rent**
2.30m.*2.50 m.	600 Baht
2.50m.*2.50 m.	600 Baht
3.00m.*5.00 m.	800 Baht
2.50m.*5.80 m.	1,000 Baht
2.50m.*6.30 m.	1,200 Baht

Secondly, in case of completely occupied buildings, the other customers are grouped at the special area, which is easy to service and make a collection. Actually, this case always faces the real agriculture who wake up early in the morning to pick up their product and go straight to Pathommongkol Market.

Lastly, reengineering team realizes that it must have some staffs to re-collect/re-check the collection. So, PM will meet a 100% collection target.

From Tables 4.4 and 4.6, it can be expected that monthly rent which the customers must pay directly to PM office is approximately shown in Table 4.7.

Table 4.7. The Approximated Monthly Income.

Building	**Rent**
1	70,400
2	66,000
3	24,400
4	64,000
5	60,000
6	44,000
7	70,400
8	78,000
Total	**524,400**

In comparison, the existing system can collect the income approximately 298,620 Baht/month. See Table 4.3. But the new design system can be grouped with the income at least 524,400 Baht/month. See Table 4.7. This amount comes from only one of three methods.

4.5.4 Redesign Organizational Structure

The organizational structure should be process based and must fully support the new processes. The organization should also be flat. Decision making should be driven down to those directly dealing with customers.

For the redesigned process of administration, a redesigned organization structure is no longer necessary since the setup has only three core levels. The Collection Manager will be directly involved with the collection procedures and implementation of the new redesigned system.

4.5.5 Process Testing

The new process and support systems must be proven to work before full roll out.

Since it was mentioned in the early part of this study that the coverage of implementation was not included, an early pilot testing is recommended to evaluate the efficiency of the system to meet the business requirements.

4.6 Sustain Management Commitment

Early communication and explanation of the urgency of the reengineering project and its objectives is essential prior to roll-out and organizational restructure. Members of the top management particularly those authority cover the collecting process must play an active role in communicating the commitment of their respective jurisdiction to the reengineering effort. Difficulties encountered should not be hidden but rather communicated together with an action plan for their resolution.

However, communication should be two-way. Not only must staff or employees be aware of the project, its progress and the commitment of the management, they must also take part on it.

4.7 Integrate Processes and Organization

Since the reengineering approach will cover the involvement of other processes and systems, an integration activity over the period of the project is necessary. Boundaries between processes and systems must be clearly identified.

4.8 Implementation

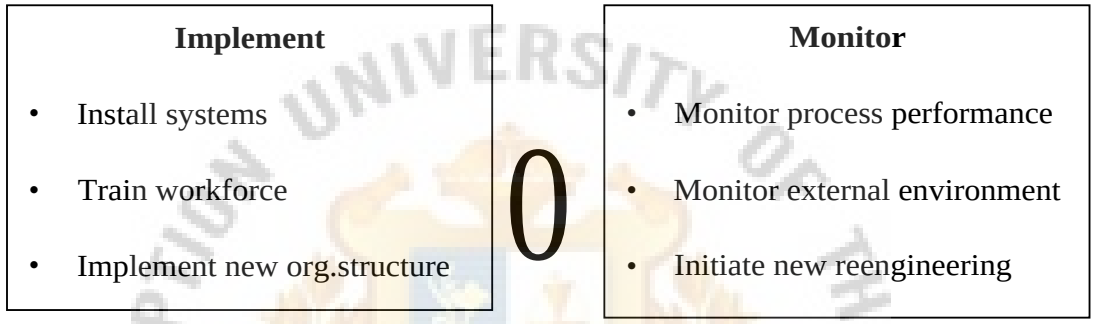

Figure 4.8. Implementation.

Implementation of the new redesigned collection processes and system may be performed radically. However, this will depend on the situation of the company upon implementation. As stated in the earlier part of the study, full implementation was excluded but rather implementation strategy/activities will be given. Also, during implementation, monitoring of the new redesigned process should be conducted so that a changing or unsatisfactory situation in any of areas may well indicate a requirement for further reengineering and/or improvement. Thus, continuous commitment of members of top management is very essential. Also, implementation of culture change program should be covered. Internal communication and building up of team working are two specific cultural changes which are essential for the reengineering effort to succeed.

An implementation Strategy was developed to help the company in their roll-out activity of the redesigned processes and system.

4.9 Process Evaluation

For this project study, it is the new application to present the PM owner. Moreover, it is expected in three cases which have to improve as following:

(1) Working time all the staffs; both current insiders and new outsiders, are working eight hours a day but day have to participate and work hard in the beginning phase of reengineering project.

(2) Cost In the starting time, this project suggest to increase 2-3 staffs (new outsiders for the reengineering team), an office staff, and a consultant. Therefore, the expenditure in each month will increase approximately 30,000 baht.

(3) Customer service_ In this study, it plans to make a questionnaire every month for keeping any useful feed back from customers. Then, the reengineering team will improve and apply to the next month.

V. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Ideas in Business Process Reengineering (BPR) have "kicked off' for almost a Decade after Michael Hammer, one of the considered great priests and gurus of it, published his paper in 1990. However, many researchers and writers claim that reengineering has been in the market several years prior to Hammer's writing. But almost all of them have pointed out to three main reasons for such move, namely the emergence of changes in the external environment creating strong pressure on organizations to survive and stay competitive, the pulling together of many ideas into a coherent management tool capable of delivering substantial performance gains, and the rapid technology innovation.

One of the difficulties in taking and learning more about business process reengineering is that the term BPR is often used loosy or incorrectly. There are also several developed methodologies, techniques and tools of BPR. However, the application of them varies from one organization to another. A methodology applied to a particular organization may not be applicable to another. Methodologies, techniques and tools of BPR depend on the needs, vision, setup and strategies of the organization. However, the following **BPR** basics are common among them:

A process orientation

A horizontal focus across boundaries

A customer perspective

Building organizational capabilities/competencies

Empowerment of individuals in the organization

Improvement through application of information technology

For the purpose of this project study, **BPR** was defined as the rapid and radical

redesign of strategic, value-added business process- and the system, policies and organization structures that support it — to optimize the work flows and productivity in the organization. Thus, **BPR** is not a tool but a systematic, disciplined improvement approach. It is not simply information engineering, a set of technical skills nor applying information technology solutions. While it relies heavily on special expertise and tools, its power lies in how it struggles with underlying business processes as part of a set of decisions about what is needed, what can be accomplished, what will be the effected and how long change will take.

Aside from pursuing such exploration, this study will also be the pioneer move for the company to go on radical and incremental improvement providing the knowledge and concepts of reengineering. The developed methodology would be set as baseline for the said approach. Also, it was able to cover the three major components, namely, planning, execution, and implementation, incorporating "As-Is" models for collection process to come up with "To-Be" models for the redesigned processes and policies. Not to mention also are the tactical objectives formulated from these high level improvement opportunities. Although the full implementation was left undone, a suggested implementation plan could help the company in their roll out activity. Thus, the achievement of benefits and success results will be now in the hands of the reengineering team as well as the top management.

5.2 Recommendations

It is recommended that the lessons learned by other companies who have utilized the **BPR** approach will serve as a know-how information to PM rather that hindrances. An assessment survey should be conducted to evaluate the performance of the approach. During the implementation stage. PM should follow these basic rules:

(1) Recognize that IT is only part of the solutions: It allows top management collect, store, analyze, and communicate and distribute information better.

(2) Bring in internal or external IT particularly in the field of collectionprocedures and policies experts when necessary: their knowledge, skills, acumen and experiences are invaluable.

(3) After implementation, continually monitor the performance of the redesigned collection processes and policies and keep track of the statistics.

As an overall recommendation for the application of business process reengineering the company should always take into account the following points:

(1) BPR must be accompanied by strategic planning, which must address leveraging IT as a competitive tool.

(2) Place the customer (external and internal) at the center of the reengineering effort concentrate on reengineering fragmented processes that lead to delays or other negative impacts on customer service.

(3) BPR must be "owned" throughout the organization, particularly by the top management, not driven by a group of outside consultants.

(4) Reengineering teams must be comprised of both managers as well as those who will actually do the work.

(5) The IT group should be an integral part of the reengineering team from the start.

(6) BPR must be sponsored by top executives, who are not about to leave or retire.

(7) BPR projects must have a timetable, ideally between three to six months, so that the organization is not in a state of "limbo".

(8) BPR must not ignore corporate culture and must emphasize constant communication and feedback.

(9) There should be a set of aggressive reengineering performance targets.

APPENDIX A

FIRST STOP FOR REENGINEERS

First Stop for Reengineers: Human Resources

By Larry G. Willets

Is your traditional organization not operating as efficiently and effectively as it should? If so, your human resources department may be the first place to start reengineering, not the last. That's the way such leading corporations as AT&T and Hewlett-Packard are doing it.

Reengineering is usually targeted to development, manufacturing, logistics, distribution, or occasionally sales and customer support. But rarely do you hear about finance and human resources. Granted, these are internal functions and not part of the reengineering mantra to first fix processes that directly touch the customer or significantly reduce costs. Human resources, however, is a set of processes and systems that enable your greatest assets to achieve their potential. "Human resources should be at the heart of reengineering," says Row Henson, a vice president of human resource management systems strategy at People Soft in Walnut Creek, Calif.

Behind the scenes, many American corporations and agencies are rebuilding their human resources, or HR, function to support larger reengineering efforts. A key in these efforts is the use of team-based technology from integrated HR systems to hiring automation to groupware.

The Brown Group Inc. in St. Louis, one of the world's largest footwear companies, had an immediate problem of accounting system integration, but quickly realized that the systems managing pay and people were just as problematic. After installing an integrated HR and payroll application in a client/server environment, the company found some unexpected benefits. "We used to have one person who knew the report writer on the old system. Now people can access their own data," says Kathy

Franke, project manager for HR applications. She adds that the reengineered process and tool have empowered teams with more control and less paperwork.

What is apparent is that it's not only technology but a reengineered process that allows HR teams to access data and spend more time advising and less time sorting paper. The Southern Company, in Atlanta, Ga., which operates utilities and nuclear facilities in the southeast, uses a new HR system as a "part of our total commitment to reengineering," says Laurie Swift, information systems manager for HR and customer systems.

So, where is HR and its supporting technology going? According to the Workplace 2000 study, yesterday's average worker was a male, age 46 with a two-child family, 10 years in a job and an individual performer. In the 21st century, she is 36 with a diversified background and family life, will likely not spend more than five years in a job, and will be a team performer.

Yesterday's employer was a local business with offices and a strong bottom-line profit motive. Tomorrow's will be global, flat, supporting telecommuting, nimble and quickly changing. Loyalties will be based on shared values and performance, not history.

This leaves the HR function and technology in a quandary, say experts. Yesterday's (and today's) HR practice is local, hierarchical, task-driven and skills-based. Tomorrow's will be global, self- directed, and core competency-based. Technology is centralized, isolated, and computer-intensive; tomorrow it will be network-centric, analytical, open and distributed. How do they catch up? Human resources and its technology must follow the industry by reengineering the its own business processes and adopting new team-based technologies, say experts.

Reengineering human resources involves many activities, but three deserve some particular attention according to Terence Burton and John Moran authors of The Future Focused Organization: "Future-focused organizations constantly need to rethink and reengineer their current hiring, evaluation, pay and promotion processes," say these executives with The Center for Excellence in Operations in Nashua, N.H. "Both the mental skill set as well as the willingness of the spirit" must be evaluated in the hiring and evaluating process.

The authors, in fact, suggest a checklist of "spiritual" attributes such as being non-judgmental, having individual respect and being participative and supportive. "Performance appraisals," they observe, "are often a weapon for the old-line manager, but in a reengineered environment are a means to collect previously-agreed-upon data from team members and customers." They say compensation in the future will be comprised of variable parts, for example team bonuses, that may total 40 percent of income.

The current technology of many human resource departments cannot handle these kinds of demands for flexibility, customization, analysis and decision support, say people in the field. In response, companies are moving their internal systems to team-based technology. For example, Lotus Development Corp. of Cambridge, Mass., is using its own groupware product, Notes, as a front-end collection system for its human resource application and has created a "people-information warehouse." "We've pushed to the edge in using human resource information from a user, manager and a HR standpoint," says Russ Campanello, Lotus vice president of human resources.

Quaker Oats is moving from an old batch system to an integrated HR, payroll and benefits application. "I've been told that there is code in the payroll system from 1963. But now we're going to go from having the oldest technology to having the newest,"

says Gail Holmberg, Quaker's manager of systems development. The net effect is more than just a technology upgrade. The new system is having such an impact on workflow that the user departments are conducting reengineering.

The technology and reengineering revolution isn't just in mainstream HR and payroll applications - it's hitting support tools as well. Bolvad Communications of Cherry Hill, N.J., makes JATTS, the Job Activity Time Tracking Software, for use mainly in engineering environments. "The engineer becomes a scapegoat for late products in many organizations because of poor planning upstream and the lack of good time-tracking tools. We've created a tool that tracks real activities across processes and is helping break down the walls between engineering, accounting and sales," says Bolvad President Oleg Boyarsky.

Can human resources be at the heart of reengineering as Henson claims? That's unclear. Human resources is often "focused on internal record keeping and is cEtouchy-feely.' It needs to look at people as an investment and to be more cEhard' in its approach to the business. HR must show value. If not, its gone!," says Henson.

Morse echoes this challenge: "HR must change its role from administrative paper-pushing to proactively helping the hiring manger and supervisors do their jobs." And how is this done? "Be strategic. It's not uncommon for a company to cycle senior executives-to-be through the vice president of HR position," says Morse. If they do stay long enough to bring other business perspectives to the function, then some significant value may be added, he says.

APPENDIX B

THE FINAL STEP IN BUSINESS REENGINEERING

The Final Step in Business Reengineering: Site Selection:

By James H. Renzas

Too often, reengineering focuses exclusively on evaluating how a business process should run and ignores the environmental factors crucial to its success. Relocation can present an ideal opportunity to maximize the rewards of a business process reengineering effort.

Location factors have a direct effect on a company's performance. Additionally, workforce and facility characteristics have a direct bearing on reengineering objectives. But here there are pitfalls. Relocation often results in significant employee attrition due to the cost and disruption associated with the move. However, in most cases relocation attrition can be controlled with proper planning.

Prior to finalizing any reengineering plan, BPR teams should identify what business climate factors are essential to success and compare these with the company's current location. For example, Tenneco Inc. of Houston, Texas, decided to adopt a shared services strategy in order to boost efficiencies and reduce costs. After the decision was made to establish a shared services unit, company managers reviewed existing locations to determine if they could satisfy their labor requirements.

The only way to accurately measure whether existing corporate facilities can satisfy the needs of a reengineered operation is to compare existing sites with totally new locations. A side benefit: Companies often find reengineering is more efficient because die-hard corporate attitudes disintegrate during a relocation or consolidation process. This "clean sheet" approach parallels the reengineering itself, where old ideas and historical circumstances are cast aside for a more rational plan.

Some areas have lower wage structures due to more affordable housing and lack of competition from other employers. Lower payroll costs can help a company to

become more competitive, since wages are typically a major expense item. A new location can also allow a company to better match wage rates with the skills requirements of the newly reworked operation.

Steps in the Process

The first step in this process is to identify what factors are critical to the success of the revamped organization. Reengineering is an excellent time to re-evaluate the skill sets of your company's workforce - presenting an opening to revitalize the organization through retraining and recruitment. It might even be paid for. State and local incentives gained during the location review process can often partially offset recruitment and training costs.

After reviewing labor force requirements, a thorough assessment of the real estate needs of the reengineered business should be done. A block diagram of current and future space requirements can help to identify the general parameters of a building's size as well as layout. The BPR team should evaluate existing real estate to determine if the space is sufficient to support the reengineered operation and whether the configuration of the space supports the new processes.

While real estate is important, it should not be the driving force behind the ultimate selection of a site. Keep in mind that real estate costs typically comprise less than 10 percent of a business' operating costs. Though tangible and easy to quantify, location decisions made on the basis of property alone are frequently misguided.

Other factors can be much more important than plant considerations. For example, telecommunications requirements for reworked operations are often much more demanding. The BPR team should make sure to review telecommunications and computer support needs with existing infrastructures in mind. Some areas of the country do not have the telecom infrastructures in place to support the most advanced

requirements like ISDN, digital cross connect, Ti service and asynchronous transfer mode.

As well, the business climate can vary dramatically from one state to another. Even within the same state, local government requirements and attitudes can vary widely.

When Kaiser Permanente decided to consolidate certain accounting functions, a statewide evaluation of California yielded significant variations in local area attitudes toward business. For example, some cities can take as long as six months to approve building modifications. Other, more business-friendly locales can accomplish the same approvals in three weeks. In addition, some communities offer tax abatements, job creation credits and reduced fees. Taxes, utilities and business regulations are highly variable by location.

Sophisticated BPR planning teams review each of these factors prior to starting consolidation or relocation projects.

Selecting the Best Location

Once the decision is made to find a new location, it is important to follow a systematic process for selecting the best site. Ranking important location criteria enables the site selection team to develop a screening system for objective decision-making. This is important since individual biases can interfere with good business judgment at this point in the process.

Starting with the least restrictive criteria, the project team can narrow the range of location alternatives using a process of elimination. As the screening criteria become more restrictive, fewer and fewer locations will emerge as having the right stuff.

Once a short list of three to five alternative locations has been identified, the project team should go visit each one. Extensive research should be done at each area, including

in-depth interviews with managers of similar businesses. The project team should keep in mind labor market dynamics, long range business costs and support infrastructure (including available sites and buildings).

Once all the areas have been visited, the project team should meet to eliminate all but two finalist locations. Both sites should be able to support the reengineered operation successfully.

Managing the Move

Once a new location is chosen, the real challenge is to maintain productivity before, during and after the move. Proactive measures should be taken to control attrition by identifying and communicating with crucial employees. As well, recruitment and training issues need to be addressed well ahead of time. At this point in the process, communications with existing staff, communities and customers is paramount.

The implications of all official announcements must be clearly thought through ahead of any relocation plans. Premature public announcement can bring down a hail storm of negative publicity on a company. Existing employees, fearing the unknown, can bring productivity to a standstill, making a successful relocation unlikely. Customers, frustrated by internal turmoil and poor morale, may seek alternate sources. A professionally prepared relocation implementation plan which anticipates these problems is the best insurance against relocation-related disruption.

Lastly, the **BPR** implementation plan should incorporate elements of the move - not just construction. An oversight process manager should be assigned to monitor the various components of a relocation including facilities, taxes/regulations, equipment, human resources and telecommunications.

APPENDIX C

THE LANDSCAPE OF PATHOMMONGKOL MARKET

by bq

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Landscape of Pathommongkol Market.

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APPENDIX D

THE SPECIFIC BLOCK IN EACH BUILDING

ตลาดปฐมมงคล

(Pathommongkol Market)

ตลาดกลางผัก-ผลไม้ จ.นครปฐม

(Fruit&Vegetable Central Market, Nakornpathom)

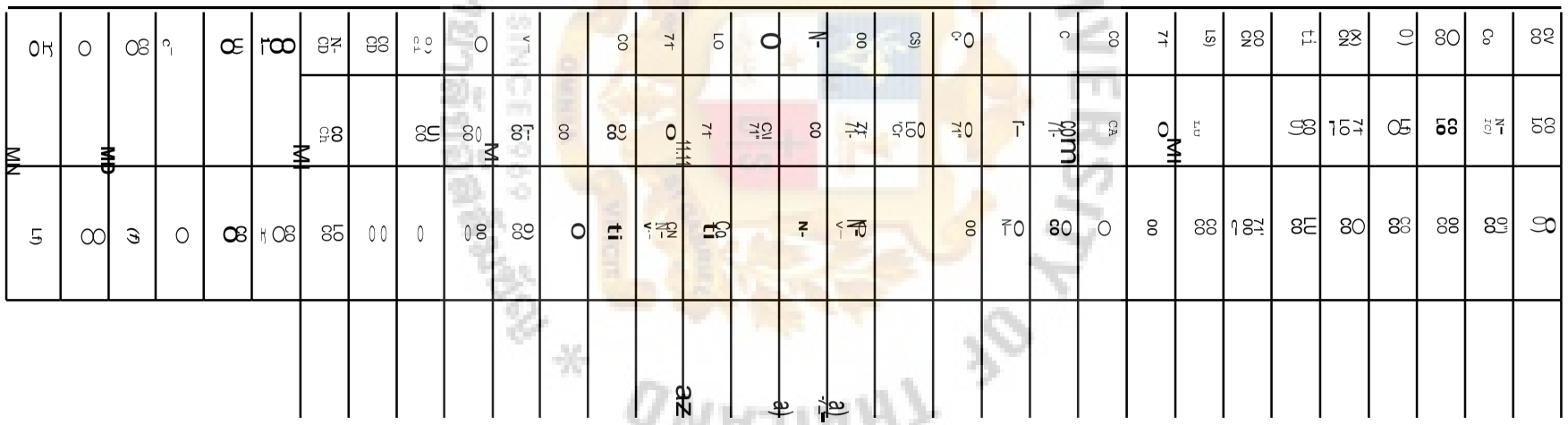


Figure D.1. Building: 1.

ตลาดปฐมมงคล

(Pathommongkol Market)

ตลาดกลางผัก-ผลไม้ จ.นครปฐม

(Fruit&Vegetable Central Market, Nakornpathom)

ตลาดผัก (Vegetable Market)

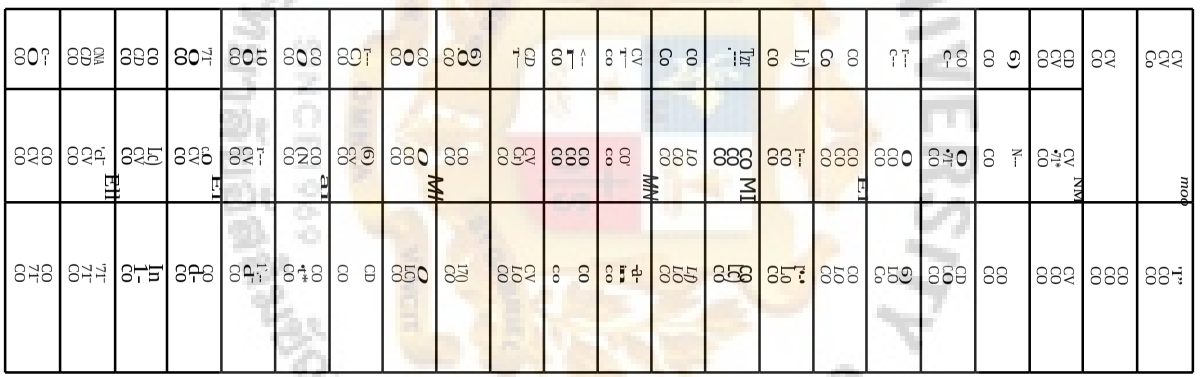
Figure D.2. Building: 2.

ตลาดปฐมมงคล

(Pathommongkol Market)

ตลาดกลางผัก-ผลไม้ จ.นครปฐม

(Fruit&Vegetable Central Market, Nakornpathom)



ตลาดผัก (Vegetable Market)

Figure D.3. Building: 3.

ตลาดปฐมมงคล

(Pathommongkol Market)

ตลาดกลางผัก-ผลไม้ จ.นครปฐม

it&Vegetable Central Market, Nakornpathom

ตลาดผัก (Vegetable Market)

Figure D.4. Building: 4.

ตลาดปฐมมงคล

(Pathommongkol Market)

ตลาดกลางผัก-ผลไม้ จ.นครปฐม

(Fruit&Vegetable Central Market, Nakornpathom)

ตลาดผัก (Vegetable Market)

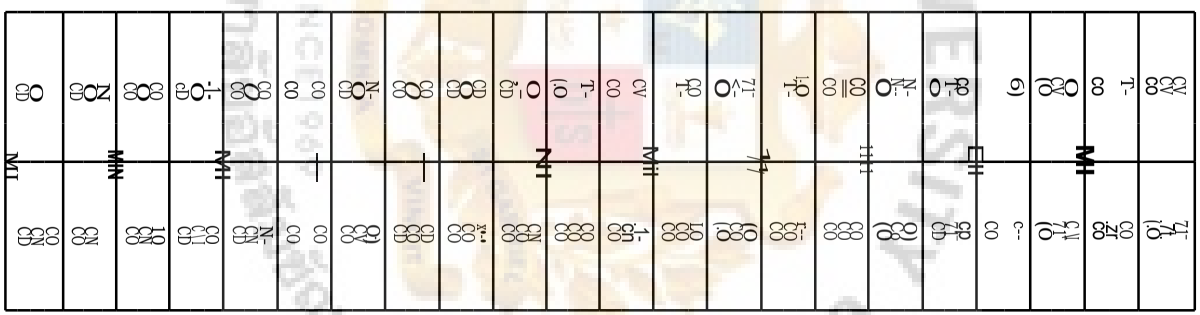
Figure D.5. Building: 5.

ตลาดปฐมมงคล

(Pathommongkol Market)

ตลาดกลางผัก-ผลไม้ จ.นครปฐม

&Vegetable Central Market, Nakornpathom



ตลาดผัก (Vegetable Market)

Figure D.6. Building: 6.

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ตลาดปฐมมงคล

(Pathommongkol Market)

ตลาดกลางผัก-ผลไม้ จ.นครปฐม

(Fruit&Vegetable Central Market, Nakornpathom)

ตลาดผัก (Vegetable Market)

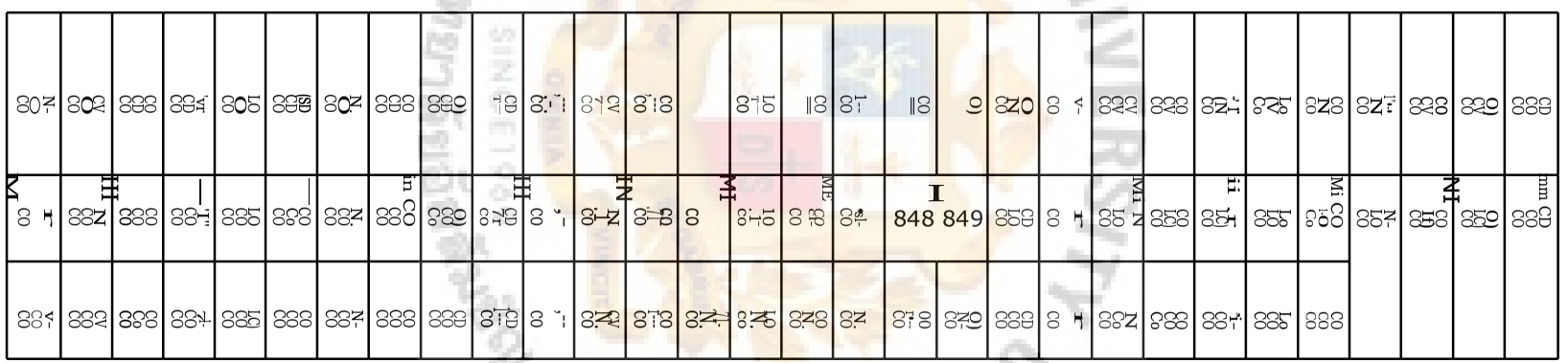
Figure D.7. Building: 7.

ตลาดปฐมมงคล

(Pathommongkol Market)

ตลาดกลางผัก-ผลไม้ จ.นครปฐม

(Fruit&Vegetable Central Market, Nakornpathom)



ตลาดผัก (Vegetable Market)

Figure D.8. Building: 8.

ตลาดปฐมมงคล

(Pathommongkol Market)

ตลาดกลางผัก-ผลไม้ จ.นครปฐม

(Fruit&Vegetable Central Market, Nakornpathom)

ตลาดผัก (Vegetable Market)

Figure D.9. Building: 9.

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