REENGINEERING: AN ANALYSIS OF FACTORS THAT INFLUENCE SUCCESS OR FAILURE

by

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Submitted to the Alfred P. Sloan School of Management
and the School of Engineering
in Partial Fulfillment of the Requirements of the Degree of
Master of Science in the Management of Technology
at the
Massachusetts Institute of Technology
May 1994

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ABSTRACT

Reengineering is one way to make large scale, radical change to an organization in great need. However it is strong medicine and should only be applied when absolutely necessary. As a prescription for improving corporate health, it is successful only 30-50% of the time. To understand the reasons for success or failure, the reengineering process has been divided into three stages for analysis; assessment, redesign, and implementation. My thesis will describe the basic methodology, applications, and limitations to discover the underlying factors that directly influence the eventual outcome of the reengineering effort. And to answer the question that is central to this thesis; which stage or factors most influence the eventual outcome of the reengineering effort?

Reengineering is essentially starting a business over again with the resources and history already in place. It is one tool for changing the culture or processes of an organization. Although no stage is easy, the implementation process is by far the most challenging stage of the process. Implementation requires skills that are different from those that are needed during the redesign process. In most cases, the redesign team develops a new process that is superior to the current one. However, changing the culture and the business to adapt to the new process sometimes goes awry. To support a permanent and successful transition to the new business processes, this study suggests that two levels of leadership, at the senior level and at the core team level, are crucial to have the greatest chance for a successful reengineering effort. Therefore, careful selection of the team members is key.

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ACKNOWLEDGMENTS

My gratitude to my family for the uprooting and inconvenience caused by this year of studies. Especially Laurie, who painstakingly helped with all writing assignments including this one and for letting me fill out that application. To Jenny for her compassion and adaptability. To Lindy for her daily inquires as to my status in this process. To Cameron for his cheerful and clever ability to get me outside and away from work.

To my advisor, Russ Olive, thanks for smelting my ideas into coherent form and adding your own. And my reader, Rebecca Henderson, thanks for your ideas, assistance and support. To Sarah Kennedy for the perspectives of a practitioner. Without the input from the four companies surveyed, this would not be a thesis. Your diligence and patience for a long questionnaire and interview is unsurpassed. To Virginia Gifford-Reckley, without her friendship, cheerfulness and computer support this document would be incomplete.

And lastly, Albert Einstein because he changed the fundamental way we view the universe--he reengineered physics.

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1. INTRODUCTION AND BACKGROUND FOR REENGINEERING

1.1. Introduction

Reengineering has been the fastest growing business improvement tool in the first few years of the 1990's. This thesis will analyze the various factors that influence the eventual outcome of a reengineering effort. I will first explain what reengineering entails. And then why, among the myriad of process improvement alternatives, a company would choose reengineering. The section on Who Should Reengineer discusses the situations that companies may find themselves in and whether reengineering is applicable. Finally, the last two sections investigate why success or failure may occur.

1.2. What is reengineering?

Reengineering is about product and process innovation for the purpose of gaining and sustaining a competitive advantage. Companies that make technology exploitation one of their core competencies are more likely to succeed in this period of ongoing technological change. Reengineering implies conceptually looking at processes differently from the past. It forces one to ask the question of "how can we do things differently?". It should enable one to focus thought on how to use the latest capabilities of technology and management methods to achieve entirely new goals. Reengineering allows any organization to take a blank sheet and act like a start up company, but with the resources available to a larger firm. Thus, the organization is enabled to design a system with the technology of today without the burden of the infrastructure and culture of the present system.

Understanding the terminology is an important first step to discussing any methodology. Reengineering as defined by Hammer and Champy will provide a starting point. From this point, I will bring together descriptions from other practitioners that put substance to the definition by identifying some of the characteristics of a successfully reengineered process. Understanding this framework is the first step in developing arguments for the success or failure of the process.

Hammer and Champy, who receive credit for coining the term, define reengineering as "the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service, and speed."[1] By fundamental they mean the processes that a company uses to conduct its business and why the process is structured as it is currently. Radical depicts the root of the change; a reinvention of the process and in a few instances the entire business or industry. Process(es) describe the methods of taking inputs and producing outputs of value to the customer. Dramatic entails quantum leaps and order of magnitude improvements. To measure the effectiveness of any reengineering program, one must apply these subjective metrics.[2]

Reengineering is a new concept with one clear idea; creating the opportunity for a business to reinvent itself. The mind set of the reengineering team is to redesign the business as if they were starting a new company. "At the heart of reengineering is the notion of discontinuous thinking -- of recognizing and breaking away from the outdated rules and fundamental assumptions that underlie operations. Unless we change these rules, we are merely rearranging the deck chairs on the Titanic. We

[1] Hammer, Michael and James Champy, *Reengineering the Corporation*, New York: Harper Collins, 1993, p. 32.
[2] Ibid., pp. 33-36.

cannot achieve breakthroughs in performance by cutting fat or automating existing processes. Rather, we must challenge old assumptions and shed the old rules that made the business under perform in the first place."[3]

Reengineering encourages a holistic viewpoint. "Systems thinking is a discipline for seeing wholes. It is a framework for seeing interrelationships rather than things, for seeing patterns of change rather than static 'snapshots'."[4] A reengineered process has characteristics that change the nature of the job tasks, the organization of the work, the roles and responsibilities of the work force. Hammer in his influential 1990 Harvard Business Review article suggests that reengineered processes should:

1. "Organize around outcomes, not tasks. This principle says to have one person perform all the steps in a process. Design that person's job around an objective or outcome instead of a single task. Have those who use the output of the process perform the process."[5] This type of job structure provides the opportunity, almost demands that responsibility moves to those doing the work rather than those who supervise, thus empowering the work force to make decisions. "When the people closest to the process perform it, there is little need for the overhead associated with managing it."[6] This efficiency gain is realized through the reduction in layers of management.

2. "Treat geographically dispersed resources as though they were centralized. The conflict between centralization and decentralization is a classic one. Decentralizing a

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[3] Hammer, Michael, "Reengineering Work: Don't Automate, Obliterate," Harvard Business Review, July-August 1990, p. 111.
[4] Senge, Peter, *The Fifth Discipline*, New York: Doubleday Currency, 1990, p. 68.
[5] Hammer "Reengineering Work: Don't Automate, Obliterate," p. 115.
[6] Ibid., p. 118.

resource (whether people, equipment, or inventory) gives better service to those who use it, but at the cost of redundancy, bureaucracy, and missed economies of scale. Companies no longer have to make such trade-offs. They can use databases, telecommunications networks, and standardized processing systems to get the benefits of scale and coordination while maintaining the benefits of flexibility and service."[7] This organizational structure provides the efficiency of a centralized arrangement with the customer focus of a decentralized group. This changes the focus of the company from function to process.

3. "Link parallel activities instead of integrating their results. The new principle says to forge links between parallel functions and to coordinate them while their activities are in process rather than after they are completed. Communications networks, shared databases, and teleconferencing can bring the independent groups together so that coordination is ongoing."[8] With this approach, teams take the place of other, more hierarchical organizational structures.

4. "Put the decision point where the work is performed, and build control into the process. Managers handle any exceptions."[9] Management's role evolves from supervisor and scorekeeper to leader and coach.

5. "Capture information once and at the source. Today when we collect a piece of information, we can store it in an on-line database for all who need it. Bar coding, relational databases, and electronic data interchange (EDI) make it easy to collect, store, and transmit information."[10] The introduction and integration of information

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[7] Ibid., p. 120.
[8] Ibid., p. 122.
[9] Ibid., p. 123.
[10] Ibid., p. 123.

technology replaces less efficient means of transcribing data such as clerks and data processing centers.

Reengineering by itself is not a downsizing or headcount reduction process. However, the nature of reinventing the process to take advantage of more contemporary information and process technologies are, in many cases, more efficient than existing processes. Historically, the scientific management model pushed organizations to become larger with more specialized work rules established for every possible contingency. This required large management systems (overhead) to handle the coordination process. The managers created elaborate systems to monitor the performance of the various parts and ensure that coordination was happening. This structure was suited for high growth. The structure of U.S. Industry from early industrialization to perhaps as late as the early 1970's fit this model. As more capacity was required, more workers were funneled into the bottom of the pyramid.[11] Reengineering attempts to change the way companies are organized and how the work is performed so that increased capacity is gained via improved processes.

1.3. Why reengineering?

There are a myriad of process improvement methods in existence from continuous improvement to activity based costing to reengineering. The focus with each is to improve performance, but the difference in approach affects the timetable for improvement and the mechanisms driving the change. Reengineering promises the most dramatic improvements but the price is radical change. In a 1993 survey conducted by Price-Waterhouse, respondents from diverse industries (electronics,

[11] Ibid., pp. 11-18.

pharmaceutical, and heavy machinery) describe their top three reasons for undertaking a reengineering effort as "customer demand, competitive pressures, and financial performance."[12] Their expectations for increased productivity, profits, customer satisfaction, and quality range from 7% to 100% while reducing cost, inventory and cycle time by as much as 400%.[13] A similar study by Coopers & Lybrand conducted in late 1993 indicates that declining market share (35%), cost cutting pressures (24%), and productivity improvements (24%) are the three major incentives for reengineering. [14]

Drastic improvement in performance is not the only reason that companies undergo a reengineering effort. Some older companies "have built up layer upon layer of bureaucracy. Business processes--whether they involve manufacturing, sales or customer service--have become complicated and unwieldy."[15] Often, the bureaucracy is tied together via computer networks or programs that handle mundane processes such as payroll, accounts receivable, billing and ordering information. "The technologies that we have developed--computers, overnight transportation systems, and cellular and wireless communication--allow us to move information and goods very quickly, without the use of hands and feet. Over time, corporations have developed elaborate ways to process work. Nobody has ever stepped back and taken a look at the entire system. Today, if most companies were starting from scratch, they would invent themselves in totally different ways."[16]

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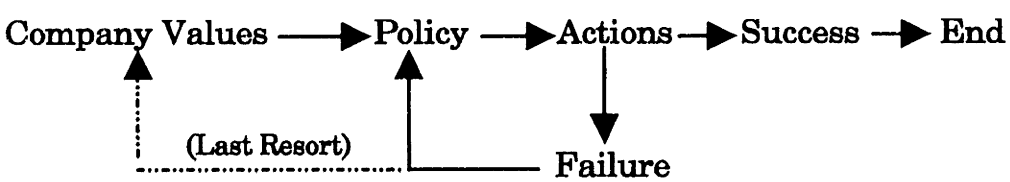
[12] "High Hopes for Reengineering," Information Week, May 17, 1993, p. 64.
[13] Ibid.
[14] Coopers and Lybrand study presented at recruiting conference 2/28/94.
[15] Greengard, Samuel, "Reengineering: out of the rubble," Personnel Journal, December 1993, p. 48B.
[16] Ibid.

Learning models may provide another insight into the reasons that many companies are involved at some level with a reengineering effort. Whenever a company has a shortcoming in a performance area they may begin to look for the root cause. Initially, they may change a limited number of items and assess the effectiveness of each. The policies and procedures may change significantly during this process. This may continue over several iterations until a solution or series of solutions eventually rectify the shortcoming. Continuous improvement methods recommend this approach. In some cases however, this iterative process may require a longer period than a company's competitors will allow or the incremental changes have not adequately addressed the shortcomings. It is under these circumstances that the values of the organization must be changed in order for the company to succeed. Reengineering provides a method to create a new process while changing the fundamental values within the culture of the company.

Learning Model[17]



Many companies desire improved performance now and in the long term. In some cases, the improvements must be dramatic in order for the company to survive. For others, maintaining the status quo may lead to circumstances that require drastic change in the future. Some companies in the latter group try to change while they are

[17] John Stoppford of the London Business School, in his International Business Management class, discussed the application of this learning model, developed by Chris Argyris, to the formulation of corporate strategy.

in a strong position. To establish credibility, proponents have documented dramatic improvements made by several companies that have reengineered their business. Advocates of reengineering suggest that companies are better off redesigning a new process than trying to fix the existing one. In situations where continuous improvement will take too long or is not gaining the magnitude of change required for survival, management has another more drastic tool; reengineering.

1.3.1. Natural Selection Alternative

Reengineering may not offer anything new. In the business life cycle there will be times when a company is in each of the three categories. It is natural for the leadership of the business in trouble to evaluate the market, customers, products and processes, determine the weaknesses and address them as required. Whether the change required is termed reengineering or something else, a change will take place. In retrospect, analysis can determine which program was most influential in the company's ability to return to health. Companies in the worst trouble will begin to address their weaknesses and make changes to alleviate the problem; perhaps dramatically improving their performance. One claim of reengineering is improved competitiveness and profitability. However, the initial success may simply reflect the application of this method to processes that were severely deficient. Reegineering may provide little sustainable competitive advantage because it is easily copied. The early adapter in an industry may gain additional profits for a short period. As additional firms adopt reengineering or another improvement process, it becomes the price of admission.

The crux for the argument in favor of reengineering centers around the advantages gained through process innovation instead of innovative new products. The premise is that new products are quickly replicated by competitors. One advantage under these circumstances is to have the most efficient, high quality process to meet the market needs. Lester Thurow, an advocate of this rationale states that, "[in] the future, sustainable competitive advantage will depend more on new process technologies and less on new product technologies."[18]

1.3.2. Process Improvement Alternatives

There are a number of process-based improvement methods. They break into two basic categories; one-time projects and continuous improvement. Most of these methods concentrate on or deliver incremental gains in performance. Reengineering is the only method that provides or delivers radical improvements. Reengineering offers the opportunity for management to step back from the current process and admit, inconsequentially, that the current process is not optimal. Rather than take time to incrementally improve the process, they can start from scratch to create the best, most modern process while taking advantage of the latest technology and management techniques. This clean slate approach allows companies to integrate the best manufacturing methods, materials management methods, performance and evaluation methods. It allows a company to change its culture to one with empowered employees while delivering products just-in-time with total quality. Chart 1-1[19] shows a comparison of the different process methods.

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[18] Thurow, Lester, *Head to Head*, New York: Warner Books, Inc., 1992, p. 16.
[19] Davenport, Thomas H., *Process Innovation: Reengineering Work through Information Technology*, Boston: Harvard Business School Press, 1993, p. 24.

CHART 1-1 Approaches to Business Improvement

OUTCOME	CONTEXT	
	PROJECT/ONE TIME	CONTINUOUS IMPROVEMENT
INCREMENTAL IMPROVEMENT	• ACTIVITY VALUE ANALYSIS • OVERHEAD VALUE ANALYSIS • PROCESS VALUE ANALYSIS	• TOTAL QUALITY MANAGEMENT • BUSINESS PROCESS IMPROVEMENT • ACTIVITY-BASED COSTING
RADICAL INNOVATION	REENGINEERING • (BUSINESS PROCESS REDESIGN, PROCESS INNOVATION)	NOT MEANINGFUL

Reengineering is similar to continuous improvement in that, "[both] of these approaches involve processes as the primary unit of analysis, and rigorous measurement of process performance is necessary for either to succeed. Both process innovation and improvement also require significant organizational and behavioral change to be successful. Finally, both ... programs require a substantial investment of time, often as much as one or two years before significant results can be seen." [20]

The reengineering focus differs from continuous improvement approaches because it pushes a company to, "strive for radical, sometimes tenfold levels of improvement in

[20] Davenport, Thomas H., "Need radical innovation and continuous improvement? Integrate process reengineering and TQM; total quality management," Planning Review, May 1993, p. 6.

the cost, time, or quality of a process. Improvement programs, on the other hand, are considered successful if they achieve a 10 percent improvement in any given year. Improvement programs start from the current state of the process and chip away at it. Innovation [reengineering] programs urge participants to imagine they're starting with a clean sheet of paper. Improvement programs are highly participative. Innovation programs tend to be addressed from the top-down in terms of how the new work design is created."[21]

Deciding under what circumstances to apply a continuous improvement method or reengineering may prove challenging. According to Hammer, "It's a combination of how far off performance is from what the customer requires, where your big cost centers are, and where you see the opportunity for greatest competitive leverage in the marketplace."[22] Champy adds, "The other important factor is timing. If you need big change fast, you can't get there with total-quality programs, which are built around bottom-up, heavy-participation, large-scale organizational change. For big change, the program has to be very laser-like, very intense, very focused, and has to be driven top-style for a couple of years."[23]

This is not to say that reengineering is the best or only tool to apply in a given situation, but the drastic improvement in performance sometimes outweighs the consequences of failure. "At the most basic level, all process management approaches flourish only in an environment intent on implementing operational change -- improving the way work is done -- rather than making quick fixes in financial results or organizational structure. Continuous improvement requires time-consuming

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[21] Ibid. p. 7.
[22] Vogl, A.J., "The age of reengineering; Interview with Michael Hammer and James Champy," Across the Board, June 1993, p. 33.
[23] Ibid., p. 34.

training and cultural change, while process innovation typically requires time for construction of new information systems and organizational structures.''[24]

The wrong conclusion to draw from this information is that reengineering is better than continuous improvement. It is not. It is, however, a different tool to use in changing the company in a shorter period of time. Continuous improvement has its place within the reengineered company as the change process stabilizes and the new processes are in place. Each method has its application. In the next section, I will identify the types of companies and which processes should be reengineered.

1.4. Who Should Reengineer?

Deciding who or what should be reengineered requires knowledge of the process, the company, the industry. Experts do not agree on the extent of who should reengineer. George Shaheen from Information Week writes, "Reengineering is a mammoth effort, tying together all parts of your organization-strategy, technology, people, and business processes. You can't just tinker with bits and pieces of your business. If you do, you're only perpetuating the sins of the past."[25] Champy suggests that in most cases, it is impractical and too disruptive to reengineer every function and every department.[26] Others suggest that the most benefit is gained when major cross-functional processes undergo reengineering. Thomas Davenport provides middle ground with his position, "Save reengineering for big processes that really matter, like new-product development or customer service, rather than test the technique

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[24] Davenport "Need radical innovation and continuous improvement?", p. 7.
[25] Shaheen, George T., "The New World Order -- Reengineering is the key to success in the global marketplace," Information Week, July 8, 1991, p. 64.
[26] Vogl, A.J., p. 26.

someplace safe and insignificant."[27] This last statement may be the most pragmatic as reengineering may require similar resources, time and adoption of change regardless of the processes' criticality to the company.

The following scenarios provide the extremes for which business process reengineering or redesign could have a significant impact. Studies by Wheelwright and Clark suggest that for "some companies the process is so poorly understood that almost everything is implicit and subject to change within a project; there is, in effect, no process. In other companies there are so many detailed procedures and rules (many of which were devised to fix a long-forgotten problem) that no one understands or can keep track of them all. The process that exists on paper is so bureaucratic that those who follow it proceed slowly, if at all. Others regularly ignore the system, leading to confusion, rework, and delay."[28]

The above scenarios may conjure up thoughts of a large company rather than a small, more nimble company. This does not mean that small companies do not have opportunities for improvement but that the large companies may be older and have more bureaucracy. The underlying assumption behind this statement is the generalization that larger companies can more easily afford and therefore often accept a certain degree of redundancy and inefficiency. A 1993 survey by Gateway Management Consulting found that "large companies (those that have annual revenues exceeding $ 1 billion) are the most likely candidates for reengineering. According to consultants, industries such as insurance, banking, brokerage and telecommunications--

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[27] Stewart, Thomas A. with Joyce E. Davis, "Reengineering; The Hot New Managing Tool," Fortune, August 23, 1993, p. 40.

[28] Wheelwright, Steven C. and Kim B. Clark, *Revolutionizing Product Development: Quantum Leaps in Speed, Efficiency, and Quality*, New York: The Free Press, 1992, p.134.

heavy users of technology--often benefit the most. The reason? Changes in technology are driving many reengineering efforts."[29]

Hammer and Champy suggest that reengineering is undertaken by three kinds of organizations. The first type are those in deep trouble. These require an order of magnitude improvement. Large, radical performance improvements are required for survival. Reengineering is clearly the method best suited for this type of organization. The corollary is that these organizations may be in such poor condition that they cannot survive the change process. However, they must do something drastic or fail.

The second organizational type includes those that have the foresight to see trouble coming. New competitors, changing environmental factors, or customer requirements threaten to change the conditions under which the business has been successful. These companies can begin reengineering prior to crisis.

The third type are those in peak condition. These proactive companies are fierce competitors and want to continue to put distance between themselves and the competition. They are erecting barriers for the competition. The impetus for reengineering in this last case comes from corporate culture; the drive to push the performance envelope.[30] In the last two organizations, creating a compelling "case for action"[31] may be difficult because most performance indicators register acceptable results.

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[29] Greengard, p. 48B.
[30] Hammer and Champy, p. 34.
[31] Ibid., pp. 149-150.

Clearly, companies that are in deep trouble and manage to successfully complete a reengineering effort will achieve the greatest relative gains in performance. Some may even define new industries or offer services that set the standard for world class performance. Creating the case manager concept for processing applications for insurance is one example of a company, Mutual Benefit Life Insurance, establishing a new standard for an industry through reengineering.[32] Within the other two groups of companies (trouble coming and peak condition) there may be processes with considerable room for improvement. These processes may either be in operations, manufacturing groups or a more service-oriented part of the business such as customer service, order fulfillment, or new product development. Inefficiency in these processes is often caused when crossing functional boundaries such as passing information from sales to manufacturing or from purchasing to finance.

The categories listed by Hammer and Champy, deep trouble, trouble coming, and peak condition cover the spectrum thus, indicating that every company is a candidate for reengineering. However, on the process level, a more specific set of criteria emerges. Cross-functional processes that significantly impact the bottom line or interface with the customer are the best targets. However, "[getting] the senior managers in the organization to agree that they need to reengineer and then selecting the right processes is the most difficult aspect of reengineering. The next challenge is to get management to agree on how to implement the change."[33] The cultural and organizational changes that are part of reengineering must occur whether the target is exploratory or significant so companies should optimize their reengineering efforts by selecting processes that have the most potential positive impact for the company.

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[32] Hammer, pp. 109-111.

[33] Filipowski, Diane, "Is reengineering more than a fad? An Interview with Mike Hammer," Personnel Journal, December 1993, p. 48L.

1.5. Success, Why?

With the boom in reengineering there are bound to be successes and failures. In this section the successes and their reasons are explored. Numerous detailed accounts of success are in the literature. These accounts create excitement in management of other companies who see their situations similar to those described. They also focus attention on the methods that enabled the success, in this case reengineering. Rather than generate another list of successful redesigns and implementations, I will derive the common themes that have led to success in these companies.

In their book, Reengineering the Corporation, Champy and Hammer develop a list of what not to do, and suggest that by avoiding the pitfalls listed while following the 'to do' list any reengineering effort will ultimately succeed. However, if the list is examined from the opposing view, "when a company avoids all of the pitfalls will it succeed?", the answer is not always yes. Every consulting firm and possibly every consultant, has a different viewpoint on the criteria for success. There certainly are some factors that are required for success and others that are helpful.

Reengineering by its nature, is a top-down, autocratic method. "Major redesign efforts often require senior management to spend at least 50 percent of their time on managing the change program. The need for such a degree of top-level involvement is thus a key factor in deciding how radical the effort should be. No major redesign programs succeed without an effective top management team in place. Given the radical thinking implied by the development of new business models, no existing policy or organizational issue can be held sacred. And given the need for speed, there

can be no room for fundamental conflict at the top. The team must be in place, and all its members must be on board."[34]

Numerous articles, books, and surveys have stressed or found that successful reengineering efforts almost always require upper level management to support and champion reengineering. A Coopers & Lybrand study found that the sponsor of the effort was decidedly different than the leader of the change process. The sponsor of the reengineering process was the CEO (43%) or the Chairman (29%) in most cases. However, the leader of the change process resided at lower levels within the organization Senior Vice President (50%), Senior Manager (29%), or, surprisingly, the CFO (21%).[35]

A McKinsey longitudinal study has shown that truly successful redesigns that exhibit "substantial, lasting improvement comes only from a series of initiatives spaced out over a period of years."[36] This may be contrary to the perception of reengineering as a painful, but short process that one must endure prior to excellent performance. The problem with this finding is that it may not apply specifically to reengineering because this methodology is too new to have conducted a study of the long term effects. The series of initiatives may be a combination of methods including Total Quality Management, Total Employee Involvement, and Just-In-Time.

Roy Manganelli CEO of Gateway Consulting says, "a variety of factors must be in place for reengineering to succeed. These include senior-level sponsorship, adequate staffing and financing, a detailed methodology, and selecting the right strategic value-

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[34] Heygate, Richard, "Immoderate redesign; management of organizational change; Core Process Redesign," The McKinsey Quarterly, January 1993, p. 73.
[35] Coopers & Lybrand study 2/28/94.
[36] Heygate, p. 74.

added processes to reengineer."[37] This listing summarizes many of the points made by Hammer and Champy. When these attributes are lacking, success is much more difficult to achieve. However, they may not be adequate to ensure success.

1.6. Failure to Achieve Dramatic Results; Why?

The successful stories generated by reengineering efforts are truly extraordinary. The gains in performance are phenomenal. Yet, success of the magnitude that generates the greatest interest happen less than half of the time. By their own estimation, Champy and Hammer propose that "as many as 50 percent to 70 percent of the organizations that undertake a reengineering effort do not achieve the dramatic results intended."[38] This estimation stems from a 1991 CSC Index survey that discovered "one-quarter of nearly 300 North American companies involved in reengineering reported that they were not meeting their goals. We [Hammer and Champy] believe the failure rate for reengineering is, in fact, much higher -- on the order of 70%."[39] Companies seem to look beyond the negative side of reengineering and only concentrate on the advantages. This section will investigate the causes of failure and begin to build toward the thesis presented in chapter 2.

Why does reengineering fail? According to a Coopers & Lybrand study, the major cause is that companies fail to understand the change management issues (31%)

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[37] McPartlin, John P., "Why Reengineering Runs Aground," Information Week, October 25, 1993, p. 32.
[38] Hammer and Champy, p.200.
[39] Stanton, Steven, Michael Hammer, and Bradford Power, "Reengineering: getting everyone on board," I.T. Magazine, April 1993, p. 23.

embedded in the effort. Improper communications (10%), failure to define the objective (8%) and existing thinking (6%) are the other major contenders.[40] Clearly, there are varying levels of investment, commitment, and even disagreement on which approach to take...

One of the major elements for a successful reengineering effort is the priority and amount of time spent by senior management. Beyond the time element, management must also understand the intensity of the change effort that coincides with reengineering. On this point Champy offers, "the most common misunderstanding is that reengineering is a change program of normal proportions that can be managed in what I would call normal management styles and normal management processes. So you'll see people attempting it without the degree of intensity and focus it demands, and without the management tools and techniques that they need in order to accomplish transformational change. Some of that, I think, is a rationalization. It's easier to think of your organization as being one that doesn't need radical change, so you rationalize back to a level that you see is manageable."[41]

Another possible reason for failure includes the length of time from discovery through implementation. John Hagel from McKinsey states, "Time is critical in core process redesign because you have to deliver one-third to one-half of the total performance improvement potential within the first twelve months. Otherwise, motivation fades."[42] This statement contrasts that of the longitudinal study which points out that waves of projects over a number of years differentiates the successes from the failures.

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[40] Coopers & Lybrand study 2/28/94.
[41] Vogl, p. 32.
[42] Browning, John, "The power of process redesign: a roundtable discussion with John Hagel, Richard Heygate, Rod Laird, and Greg Prang; Core Process Redesign; Panel Discussion," The McKinsey Quarterly, January 1993, p. 47.

Richard Heygate of McKinsey has participated in numerous reengineering efforts and has developed three categories that describe patterns that consistently lead to shortfalls in performance. "First, redesign programs often display a marked lack of focus. Second, after redesign programs have been launched, senior levels of management often prove reluctant to roll up their sleeves and get personally involved with the nuts and bolts of infrastructural change. And third, because redesign efforts are so disruptive, managers often want to treat them as "on-off" initiatives of finite duration, after which things can be allowed to return to a stable, if different, routine."[43] He further suggests that "unless you can fundamentally reform the culture"[44] the improved performance from the reengineered process will quickly disappear returning the company to its previous form.

Much of the success or failure of reengineering is directly correlated to senior management. This is a top-down initiative which is in stark contrast to continuous improvement programs which are bottom-up. Senior management is responsible for the leadership of the reengineering effort and must support the changes that will take place through implementation.

Leadership stems from senior management; reengineering demands visible and continual leadership. Many successful reengineering efforts begin with a "vision" that may include some radical departure(s) from the status quo. Often, reengineering changes the organizational structure of at least some parts of the company. These changes may adversely effect entrenched middle managers by creating a new job design and work flow that places limits on their numbers and functional necessity.

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[43] Heygate, p. 73
[44] Ibid., p. 81.

This group may attempt to effectively stall any reengineering effort. It is at this point that leadership from senior management and the Chief Executive are critical to success.

The belief that one can delegate authority but not responsibility is no more true than with reengineering. Some companies have failed to achieve their performance improvement objectives because "[when] responsibility for one major redesign effort got delegated to a separate change board, the individuals on the board rapidly began to develop their own view of the corporation's future -- which increasingly diverged from that of the CEO and his team. Eventually the CEO had to step in, disband the change board, and assume personal responsibility for the program -- but not before large investments had been misdirected and much time lost."[45] Furthermore, splitting a reengineering effort to spread the burden has not been entirely successful either. "More than once, we have seen redesign efforts split into separate behaviorally- and technologically-driven programs that are pursued by different parts of a single organization. The result: a waste of huge investments, and minimal progress against overall redesign objectives"[46]

Senior managers that become immersed in reengineering to ensure its success eventually understand that there is no way to return to the status quo. The functional boundaries and interrelationships are different. Their role of providing leadership and taking responsibility for the organization solidifies. Reengineering may subside, but change is ongoing. "The perfectly understandable impulse, after a successful program, is to disband the program management function, allocate responsibilities back to the line, and return the organization to 'normal.' This is probably a mistake.

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[45] Ibid., p. 94.
[46] Ibid., p. 93.

By their very nature, the performance improvements achievable only through redesign may well mean that the role of top management has changed forever. The line activity of the future will be managing the process of continuous change."[47]

1.7. Summary

Reengineering is a new tool to improve performance. It combines many of the best techniques and technologies to create a holistic view of the company or a particular process within the company. Most companies are either conducting, planning or have completed a reengineering effort. Some of these companies have achieved the level of success that they anticipated, but the vast majority have not. The methodology requires companies to undergo radical change in the way a process is conducted. This change may trigger a series of changes that effect other processes or even change the nature of an industry. The expectation for improvement is often greater than what can realistically be achieved. Quantum leaps are difficult to achieve unless some underlying inefficiency can be found and overcome. When this occurs the industry changes as does the competitive advantage of the remaining firms.

Time, resources, and leadership are the main ingredients for success. False expectations, faulty leadership, inability, or unwillingness to change may lead to failure. Reengineering problem identification, redesign, and implementation constantly balance between success and failure. Attributes that lead to success in many situations may not lead to success under particular conditions. The reengineering process may be culturally dependent. This implies that every reengineering re-design and implementation will proceed differently. It also implies that reengineering may

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[47] Ibid., pp. 94-95.

not achieve the expected results in certain industries or in certain companies. This thesis will investigate under what circumstances reengineering is a viable alternative to radically improve a company's performance.

2. THE STAGES AND STRUCTURE OF A REENGINEERING EFFORT

2.1. Introduction

This chapter poses the central question of the thesis and frames the search for answers. The stages of reengineering, assessment, redesign, and implementation, are delineated and described. How each stage possibly affects the eventual outcome is discussed. The actual reengineering effort has a number of players involved; the champion, steering committee, core team, process owner, and core team leader or project manager. A section is dedicated to each player explaining their purpose, role and responsibilities to gain an understanding of the interrelationships encountered throughout the reengineering process.

2.2. Approach to This Research

Many consulting companies have added a reengineering department to their staff and most have attempted to differentiate their services by creating a methodology and new terminology. For descriptive purposes it is necessary to combine some of these approaches into a common theme. Therefore, three stages will be studied in order to determine the cause of success or failure. The stages are 1) assessment, 2) redesign, and 3) implementation. Prior to analyzing each stage, the contents of each will be described. Within each stage there are a number of steps, some sequential, some parallel. In many instances, order is not important when compared with content.

The central question this thesis proposes to answer is, "Which stage of the reengineering process most influences the outcome and how do the three main parties

affect each stage?" The answer will be structured so that indicators are developed as well as guidelines to alleviate some failures. The important factors that emerge from the study may be placed into certain categories for convenience such as team selection, opportunity identification, consultant selection, senior management commitment, etceteras.

My hypothesis, reinforced by Sarah Kennedy, a Senior Consultant with Arthur D. Little, Inc., is that reengineering is a good concept with great support and success through the discovery and redesign stage but fails at the implementation stage. This suggests that the methodology applied by practitioners may be sound. However, factors may arise that stifle the implementation effort including; the breadth of the reengineering effort, people within the organization unprepared for the changes, unrealistic expectations for improvement, redesign and implementation team selection, and leadership at all levels - especially from the top.

2.3. Stages of Reengineering

What is the process of reengineering? Depending on the author or consulting firm, the process varies. Common themes are evident in the stages and steps of the process. The stages are summarized as follows: first, an assessment or information gathering stage, second, the actual process redesign on paper, and third, implementation. This thesis will focus on the potential pitfalls in each stage and determine where in the process of reengineering the practitioner must beware.

The reengineering project can be broken into three stages; 1) assessment, 2) re-design, and 3) implementation. Failure can occur at any phase in the process. Parties involved in the process are the practitioner, a professional consultant who has

conducted reengineering projects in other organizations, the organizations' leadership, the people in the process to be reengineered, the business owners, suppliers, and customers. Each of these parties has a different stake in the outcome. Most of the parties want the reengineering effort to succeed, but some would rather preserve the status quo.

2.3.1. Assessment Stage

The first phase, assessment, is characterized by the initial effort performed by the organization in determining how to best meet the competitive threats within their industry. Misser (1993) discusses in detail the linkages between strategy and vision in the reengineering process. He provides a high level (appendix A) business model that provides an overview of the process.[1]

This stage entails identifying process(es) for reengineering, identifying the change mechanisms, levers or drivers, and developing a process or company vision. "Often it is obvious to most people what activities and processes are the bottleneck. The evidence is generally clear and hard to miss. It is quite obvious what processes have the greatest effect on the customer, impact on a company's strategic direction, or are not cost effective. The greater payoffs from reengineering will come from the larger or high-level processes, but the likelihood of success will be lower."[2] The company should develop its overall business strategies and objectives prior to redesigning any process. Often, it is at this juncture that reengineering becomes an alternative solution to achieve their performance objectives.

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[1] Misser, Sunil A., Business Process Reengineering: A New Thought Architecture, Management Thesis MIT, 1993, p. 62.

[2] Kruger, Phillip D., "Reengineering: a competitive advantage; Symposium: Continuous Improvement," Appliance Manufacturer, September 1993, p. 32.

The company may determine which reengineering category best fits its situation, deep trouble, trouble coming, or peak condition, in order to decide how quick and how radical the change. The company should then identify and prioritize their major processes that create value to their customers. From this list of processes those targeted for reengineering are delineated along with the required change mechanisms, levers or drivers, that align the process with the company vision. A consultant is usually contacted at some point during this phase. The consultant can assist the company in determining the category or major processes to be reengineered.

Making the right assessment at this step of the process may focus resources and effort.[3] In the assessment stage, the consultant assesses the company to ensure that commitment to change is present. They explain the timetable of this major change initiative to begin to align expectations with reality. The selection of the company team also occurs during this stage. Selecting the team is an important aspect of the reengineering effort for it is this team that will lead the effort. They may confront, "skepticism and fear from all levels of the organization. Because of the great uncertainty surrounding the reengineering effort, people assume the worst. Resistance takes the form of dismissal and denial ("We don't have a problem")."[4] The team should possess the skills necessary "[to] reduce the fear about jobs and work, compensation, career paths, and other individual concerns, [and they] must communicate frequently, explaining the need for change and the viability of the changes they want to make."[5]

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[3] Davenport, *Process Innovation,* p. 25.
[4] Stanton, Hammer, and Power, p. 28.
[5] Ibid.

2.3.2. Redesign Stage

The second stage, redesign, includes the documentation and understanding of the current process and the development of the reengineered process. The first task is for everyone on the team to understand the current process and the underlying rationale. "A process flow diagram is a useful tool to help understand the process. The flow diagram shows only the high-level processes with details of the activities or subactivities shown on separate charts. Together, the process and subactivity diagrams depict what the process does. The task of generating these flow diagrams in a team setting is often rewarding, because it requires people to think of the process moving across departments or functions and causes them to ask 'why'."[6]

The team uncovers the problems with the current process and agrees to the root cause. Metrics are developed as a device to determine performance improvement after implementation of the reengineered process. Opportunities for improvement are identified and prioritized. The team may perform benchmarking activities that provide a target for setting aggressive, but achievable goals. They may query customers for input on possible improvements. "By inspection of the process-flow diagram, the activities that are non-value added or nonbusiness value added can be identified. Cycle times for the total process and individual activities can be measured. Special activities in the process can be questioned as to applicability and suitability to the process."[7]

This stage may seem like the most difficult because of the agonizing detail and questions one must analyze and answer as a process is redesigned. This redesign stage

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[6] Kruger, p. 32.
[7] Kruger, p. 33.

is creative and offers "perhaps the most exciting [benefit] of [new process] development ... the prospect of renewal and transformation of the organization."[8]

The second major task of the redesign stage is to create the new process. The new process should bring into practice the tenets of the vision. There are two main conceptual beliefs on how to redesign the process. One states that a clean sheet of paper is used to eliminate possible constraints to the new design.(Hammer and Champy) The other suggests keeping those parts of the process that add value or provide a competitive advantage and design around the good ideas and methods already in place. (Davenport) Regardless of the method chosen, the output is similar; a redesigned process that takes advantage of simplified work flows, combined job tasks, and a process orientation.

Throughout the assessment and redesign the core team conducts interviews and solicits input from across the functional boundaries of the company. They are responsible for communicating the status of the reengineering effort. They create the new process and negotiate the transition plan. Once the redesign is complete, a simplified process flow is produced alongside opportunities or tasks to move the organization in this direction. "When properly conceptualized, these organizations [structures] can eliminate or disintermediate costly organizational bureaucracies, dramatically lower overhead costs, support rapid execution of strategies, and substantially increase the learning rate of employees and their responsiveness to customers."[9]

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[8] Wheelwright and Clark, p. 29.

[9] Quinn, James Brian, *Intelligent Enterprise: A Knowledge and Service Based Paradigm for Industry*, New York: The Free Press, 1992, p. 102.

Gaining acceptance of the new design from those affected by the changes is an important part of the redesign stage. "As the new process and larger 'business system[s]' are defined, resistance becomes more intense and focused because people start to see what it really entails. Most of it comes from middle management, the group most threatened by a new business process that requires fewer management layers and empowers front-line workers with new decision-making responsibilities and tools. At the very least, the roles of many middle managers will be redefined. ... Reengineering leaders must make these people productive members of the team, providing incentives to change."[10] The successful implementation of the new process design hinges upon the support given by those most affected.

2.3.3. Implementation Stage

Implementation is the final stage and includes the introduction and start-up, roll-out, and stabilization of the redesigned process. This stage may prove the most challenging because those parties involved begin executing the redesign plan. For the first time, commitments must be honored. W what appeared reasonable on paper and during discussions must now become reality. Work begins to address the opportunities uncovered during the redesign. The root cause for the opportunities that were identified during the previous stages are eliminated. Often an action plan is generated to keep track of the various opportunities and the time table associated with the overall implementation plan. It is during this critical stage that some consultant companies depart. These companies usually transfer their methodology prior to departing. The knowledge transfer perpetuates throughout the first two stages as the consultants teach the core team about the reengineering process and principles.

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[10] Stanton, Hammer, and Power, p. 28.

Implementation requires getting people to change. In this phase, good inter-personal relationships and leadership are a necessity. Uncertainty, conflict, rapid decision making all take place. It is imperative at this stage to have the right people in place on the teams. People leading the implementation must possess the necessary negotiation, counseling, and interpersonal skills to handle the situation. Political turf battles have the potential to stop the implementation at any point. Buy-in prior to this phase is crucial as all involved must believe that the right solution has been developed to solve the problem. Some may feel that it is too hard to change or simply refuse to change. There is the fear of failure. Poorly developed migration or implementation plans could slow the project to the point where others lose confidence in the team's ability to deliver. There is the ever-present argument that it is taking too long to achieve the results. Solutions that can be quickly implemented "invariably surface from the baseline analysis. These are opportunities to make immediate improvements, and line management is responsible for implementing them. Early wins are critical because they increase cash flow and demonstrate the value of the methodology. They also provide a shakedown cruise for the various teams--they discover firsthand the difficulties of implementing real-world change."[11]

Money may become an issue, especially for those companies that were in trouble at the start. People who agreed with the solution and direction may leave before the project is complete, thus, changing the structure and make-up of the various teams or management. New members must be socialized in the norms, values, roles and responsibilities of the team and changing organization. Poor training of those involved in the transition can cause confusion and the entire system to falter. Lastly, leadership

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[11] Harrison, Brian D. and Maurice D. Pratt, "A Methodology for Reengineering Business; Business Reengineering," Planning Review, March 1993, p. 14.

is the critical success factor in this phase. Some person or group of people must stand up and guide, cajole, assure, and assist the rest of the organization to move in the new direction.

Chart 2-1 depicts possible scenarios with the strength of leadership plotted against the quality of the implementation plan:

Chart 2-1 Implementation Plan - Leadership Strength Outcome Matrix

IMPLEMENTATION PLAN	*LEADERSHIP STRENGTH*		
	STRONG	**MEDIUM**	**WEAK**
EXCELLENT	**Success**	**Success**	**Partial Success**
FAIR	**Success**	**Partial Success**	**Failure**
POOR	**Partial Success**	**Failure**	**Failure**

Unfortunately, it is during the implementation that several problems may occur. "When the organization begins cutting over from the old process to the new, resistance shows up as non-compliance and even defiance. Obstruction often comes from out of nowhere, and from high places (where senior managers' responsibilities and turf are challenged) and low places (where jobs may change or be eliminated). Reengineering leaders must intervene to remove roadblocks and avoid curtailing the effort to mollify the resisters. It is at this point that senior executive attention and action are critical. All the preparation work either pays off or kills the reengineering effort."[12]

2.4. Structure of the Reengineering Effort

[12] Stanton, Hammer, and Power, p. 29.

The stages of the reengineering effort provide a timeline and approach to the problem of improving performance. Ultimately, the people involved will have the greatest influence over the eventual design of the process and the competitive advantage of the firm. Reengineering places some emphasis on the structure, roles, and responsibilities of the team that must bring this effort to a successful end. Because the team plays such an important role in the success or failure of the effort, I will devote some time to outlining the management structure often recommended by various consultants.

2.4.1. Champion

Reengineering, like most projects, has a structure and set of steps to better ensure that there is consistency and that nothing is overlooked. The process involves several teams and layers of support. As stated before, reengineering is driven from the top of the company and therefore places emphasis on significant involvement from the top executives. The project is managed carefully because of the drastic nature of the change process. Regardless of the specific reengineering methodology, most have a common structure with a champion near or at the top of the company, a steering committee comprised of top leadership, a core or reengineering team who will ensure the reengineering effort is completed, and the process owner.

The Leader is "a senior executive who authorizes and motivates the reengineering effort."[13] He or she has the power and prestige to make it happen, to turn the company inside out and upside down if need be, setting the standard and ensuring that it's met. The role of leader is "a self-nominated and self-appointed role,"[14] claim

[13] Hammer and Champy, p. 102
[14] hammer and Champy, p. 103

Hammer and Champy. "It is the leader who appoints senior managers as owners of business processes and charges them with achieving breakthroughs in performance. The leader creates the new vision and sets the new vision and sets he new standard and, through the owners, induces others to translate that vision into reality."[15] Sometimes the leader requires some prodding to assume the role. Someone not positioned high enough in the organization, but with access and credibility may becomes the catalyst for change. They "will have to identify a potential leader, create a sense of urgency in his or her mind, and then introduce the idea of reengineering so that the leader embraces it as his or her own."[16]

The responsibility of the leader is to create the vision he or she believes the company should adopt in order to gain or maintain a competitive advantage. They also create a sense of excitement and brings the team together. The importance of this position is such that "no other individual involved in reengineering is so key as the leader."[17] "Most reengineering failures stem from breakdowns in leadership."[18]

2.4.2. Steering Committee

The next group responsible for the successful completion of the reengineering effort is the steering committee. This is "a policy-making body of senior managers who develop the organization's overall reengineering strategy and monitor its progress."[19] The "members should represent a cross section of all key businesses".[20] Chaired by the leader, the committee is usually composed of the process owners and other senior

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[15] Hammer and Champy, p. 104
[16] Hammer and Champy, p. 108
[17] Hammer and Champy, p. 108
[18] Hammer and Champy, p. 107
[19] Hammer and Champy, p. 102
[20] Arthur D. Little, Business Process Redesign Interaction Model

managers charged with planning the company's overall reengineering campaign. "Their role is to define and prioritize key processes of the company and support the core team and redesign effort. They also provide insight during implementation".[21] This group at best can provide resources and actively support and promote the reengineering effort. At worst, this group can stall or even terminate the effort. It is in this context that senior leadership is vital.

2.4.3. Core Team

The selection of the reengineering or core team is essential to success. This team will lead the effort during the assessment, redesign and implementation stages. One of the central statements in this thesis is that the composition of the core team is essential for success, therefore, identifying the attributes of a core team that instills confidence for a successful reengineering effort. The core team is "a group of individuals dedicated to the reengineering of a process, who diagnose existing processes and oversee their redesign and implementation."[22] Typically between five and ten people, a reengineering team should consist of insiders and outsiders. The insiders should be the company's best and brightest, people intimately familiar with the existing work processes who have the intelligence and experience to analyze them in detail. The outsiders should be change agents that challenge the status quo. They need not be from outside the company, but they must be from outside the process being reengineered. Companies without them can turn to consultants with experience and expertise in reengineering to fill the role of outsiders.

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[21] Ibid.
[22] Hammer and Champy, p. 102

The core team must understand the process as it is currently configured but also think beyond the present and reach for possibilities; they must balance the status quo with need for change. The team should have enough credibility to influence the decision makers to change. Their capacity to communicate well with all levels will satisfy the responsibility of keeping the organization informed. They must manage the project while responding to changing events. Leadership is key. Their vision must dovetail with the vision of the CEO or reengineering champion. To find someone within the organization who is credible, understands the current system, is accepted within the current political and organizational structure, but is not trapped by the present is a difficult task. The question may become one of, "does a person with these characteristics exist in any organization?"

The success or failure of a reengineering effort may rely heavily on the personal attributes and characteristics of this group of people. They reflect the enthusiasm, priority, and leadership for the project. Successfully completing the reengineering effort requires this group to embody the vision of the senior executive driving the effort and maintaining a clear and cohesive image of why the company must change and how the company will operate after the change. Without a consistent vision communicated throughout the company, the reengineering effort may not gain the wide acceptance needed for success.

Team selection then becomes a critical success factor. The team should create a sense of urgency for the changes that must occur for competitive advantage while fostering credibility in those that will make the changes happen. A mix of internal and external views provides a more complete and open minded approach to possible process designs. The redesign rules are basic. It is how broadly the team can look at the process and develop potential alternatives that make the difference between an iterative

and a drastic improvement. This however, does not suggest that success or failure is a direct result of the team's ability to examine far reaching solutions, but, is more a result of their ability to convince others that the selected process improvements are best for all involved. The team's ability to communicate, innovate, and negotiate are as important as their ability to analyze, document and ascertain the root cause of problems hindering the company's optimal performance potential.

2.4.4. Process Owner

The owner of the process selected for reengineering has the crucial role of ensuring that the reengineering effort is successful. The process owner is responsible for "empowering the reengineering teams to make radical changes in processes that cross functional lines. Since most companies do not have executives in charge of cross-functional processes, champions most likely will come from the ranks of the major functional areas in the business process."[23] The process owner should stay involved in each stage, yet allow the core team to reengineer the process without constraint. During implementation the process owner may provide the most assistance by providing resources and expertise.

2.4.5. Core Team Leader or Project Manager

The project manager takes special note although in some configurations he or she is part of the core team. The project manager is responsible to plan, coordinate and control the daily reengineering activities. "He or she is particularly important in the transition phase, when redesign and change management teams need to dovetail their

[23] Stanton, Hammer, and Power, p. 35.

work."[24] The success of the reengineering effort is not entirely dependent upon this person. However, the project manager should seek guidance and assistance from the leader, process owner and the core team. The project manager has the most direct influence on the project and its outcome. For this reason, the selection of this person suggests that the leader understand the stages; discovery, redesign, and implementation. Selecting a project manager who can successfully traverse each stage and bring the effort to a successful conclusion.

2.4. Summary

Each of the three stages of the reengineering effort, assessment, redesign, and implementation has a unique purpose. Each stage also encounters difficulty in completing the tasks assigned. The resistance to changing the current process appears to grow stronger as each stage is completed. However, commitment cannot be dictated it must be ingrained. "Resistance to change ... almost always arises from threats to traditional norms and ways of doing things. Often these norms are woven into the fabric of established power relationships. The norm is entrenched because the distribution of authority and control is entrenched. Rather than pushing harder to overcome resistance to change, artful leaders discern the source of the resistance."[25] Each successive stage gives a more tangible idea of the way the organization will be structured once reengineering is complete.

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[24] Hitchner, Earle, "Reengineering the Corporation: A Manifesto for Business Revolution, book reviews," National Productivity Review, June 22, 1993, p. 443.
[25] Senge, p. 88.

3. RESEARCH DESIGN AND MODEL OF EXPECTED OUTCOME

3.1. Introduction

Chapters 1 and 2 allude to some of the potential problems along with possible explanations for the outcome of a reengineering effort. It becomes apparent that no thorough study has been conducted to examine the interrelated set of factors that deem a project either successful or unsuccessful. The current ideas about the factors that influence the outcome of a reengineering effort are built around opinions of those who have been involved in a number of reengineering efforts. The studies to date have been conducted by consultant companies who have a vested interest in the outcome and results of the study.

This particular study is from the perspective of organizations undertaking a reengineering effort. A questionnaire followed by an interview will be used to gather data from several organizations. This chapter describes the construction and purpose of the questionnaire. There are four main topics the questionnaire addresses; 1) reengineering as the right approach, 2) the stages and their purpose, 3) the players, and 4) the outcome. Each of these has a dedicated section that discusses the issues and associated questions.

3.2. Questionnaire Purpose

The questionnaire (appendix B) is constructed to evaluate four main issues. First, the evaluation of alternatives that led the company to choose reengineering to solve the problem at hand. The selection process is often different for each company. Reengineering may be expensive and is certainly disruptive. It usually effects a

significant process or part of the company and therefore may require high level approval. Questions 3, and 6 through 15 attempt to get at the salient points of the decision process; who in the organization selected reengineering as the methodology and why.

The second major issue centers on the stages of reengineering. One potential reason for failure, yet to be investigated, concentrates on where in the reengineering process failure or success is most likely to surface. Understanding the reengineering process may provide the opportunity to identify indicators that predict the outcome at each stage and perhaps for the entire project. The questionnaire is constructed so that the same questions are asked about each stage of the process. Each section represents a stage of the process; stage I (assessment), stage II (redesign), and stage III (implementation).

The third area of interest concentrates on those performing the reengineering effort. Often, there are several levels of management, consultants, the redesign teams and those affected by the change involved in the reengineering process. Interpersonal relationships have some effect on the outcome of reengineering, but how much impact they actually have has not been clearly understood. What in one case is considered a success, may in another case involving different people, become a failure. The other issue in this set of questions considers who is or are the key players in creating success or causing failure. The interrelationship between the various groups and leaders is examined to gain insight into the relationships that prove most important. This may help determine the attributes that best perform the various functions. The set of questions probing this area are 16 through 25, 33 through 37, and 45 through 49.

The fourth issue includes the actual items that the company believes were a success or shortcoming. Developing the categories which may be broadly or narrowly defined may provide some insight to the nature of the outcome. The magnitude of each item may offer some information on the overall perception of the project or process. It may also provide indications of the stage in the process that influenced the outcome. The three sets of questions that relate to this topic are 26 through 32, 38 through 44, and 50 through 56.

The questions are a combination of yes-no, weighted scale, and open-ended to allow for a range of responses. The responses will be categorized. The breadth of the categories is difficult to ascertain until the interviews are conducted. Most likely, the answers will confirm or dispel the current popular notions that have been delineated in chapters 1 and 2.

I will conduct interviews with two companies who have been publicly documented as having a successful outcome from their reengineering effort and I will try to find two companies who have been as less satisfied with their results. I will ask the same series of questions to each group. If I cannot find companies that are willing to discuss their less than satisfactory results, the sample will be expanded to include at least four companies. There may be some successes within the dissatisfied group that lend credence to the findings from the interviews with the successful group and visa versa.

3.3. Reengineering, is it the right tool?

The first issue analysis of the data might illuminate is under which circumstances reengineering has or has not been used successfully. This particular change management tool is comprehensive and more disruptive than others. Understanding

where various companies have successfully or not so successfully implemented reengineered processes may aid other organizations in the future as they assess alternatives. Comparing the goals that companies hoped to achieve at the conclusion of the effort to the reasons for selecting reengineering may suggest under which conditions the reengineering alternative is best suited. Questions 9 and 11 may seem redundant in that one asks for criteria and the other for rationale, but the order in which they are presented will allow comparison between the answers for consistency. Additionally, question 11 requests the respondent to assign a weight to the reasons reegineering was selected, therefore supplying a basis for relative importance. This question is also designed to embody the claimed benefits of reengineering over more iterative alternatives.

Analyzing who within the company makes the decision may not reveal anything surprising. However, understanding the selection criteria may provide some insight into what is different and important about reengineering as a tool. Who initiates the process (question 3) and who makes the final decision to proceed (question 10) may also give an indication of why the effort was successful within the various processes.

Question 7 attempts to derive who or what influenced the initiator of the reengineering effort. This information is hard to gather after the fact, but is important in developing an understanding of how decisions are made in a particular company. Equally relevant are the alternatives that the company evaluated prior to making the decision (question 8). It may be possible that no alternatives were evaluated due to the influence or position of the initiator of the project. Should the case arise where no alternatives were evaluated, question 6 becomes more relevant. Achieving improved performance in some area should be the criteria for undertaking a project of the magnitude of

reengineering. Regardless of the actual decision making process, an expected outcome derived from reengineering must be some form of improvement.

Finally, the number and type of processes involved in the effort will give an idea of the breadth and depth of the processes to be reengineered. For bottom line impact as well as a complete transformation to the new process, the process selected should be important to the business. Correlating the processes selected to the results achieved may give some knowledge about the importance of selecting the right process to improve. Concurrently, the size of the organization may provide an indication of the ease with which the transformation from the old process to the new process may have occurred.

3.4. Stages and their purpose

Which stage is the most indicative of success? Is there a stage that if performed properly will lead to the desired outcome? Are some stages more important than others for influencing the outcome? The difficulty with reengineering, like some other projects, is that it may be difficult to assess progress during the process. There may be critical success factors within each stage that, if monitored, would provide milestones to ensure the desired results. Finding these success factors could provide a means to predict the eventual outcome or the impetus to make adjustments. Questions 24, 36, and 48 list the most prevalent aspects of the associated stage. By assigning a relative importance measure to their responses, the companies will indicate which characteristics had the most impact on the outcome of the stage and the overall project. The short answer questions requesting success factors and shortcomings for each stage will augment this data. Each stage has its purpose with one building on the other. Separating the stages and suggesting that one is more important than another is

dangerous. This may lead some to believe that a truncated process is possible with outstanding results. The information presented in chapters 1 and 2 would indicate otherwise.

Another source of data in the questionnaire are questions 30-32, 42-44, 54-56, which ask what the company would do or not do if they were to undertake reengineering again. The answers to this question may comprise the list of lessons learned or shortcomings in the process. Conversely, the responses may also indicate the strengths in the process.

3.5. The Players

The main people involved in the reengineering effort are the senior management of the company, the core team and core team leader, and the consultant. Other parties include the people affected by the changes in the process, but this group is not the focus of this study. The assumption made concerning the people affected by the change is that they become part of the success or failure of the effort. The other three players must influence the masses in the proper way to achieve success. The steering committee, implementation teams, or other teams associated with the reengineering project come under the influence and often times the direction of one of the three main players. The outcome of the effort may be as much a result of the interaction between the players as the actual process redesign.

The questionnaire attempts to derive an answer to this problem via questions relating to the criteria for selecting the consultant, core team, assessing the unique attributes of the senior leadership, core team leader and the core team. This line of questioning continues through each stage of the process. The results may show that the senior

leader, core team leader, and core team possess similar attributes. These will most likely include leadership, competence, credibility, motivation and integrity. Each stage within the questionnaire asks which attributes of the core team were most effective. This may elicit responses that include negative comments about the core team. Analysis would indicate if the negative comments were associated with a recent change in the configuration of the core team. A number of characteristics which are typical outcomes for each stage are listed. Included on this list are the role of the core team, and senior leadership which can be measured on this relative scale.

Results from this same series of questions across stages may give an indication of how the process performed. Comparing the expected outcome deduced from the questions with the actual results may yield a predictive diagnostic. If this is the case, then predictions and importance can be placed on each of these factors. Should they prove fundamentally important to the overall outcome, more research may be required to create a methodology for selecting the proper core team and senior leader for the reengineering effort or any other large scale change project.

The consultant may or may not have a part in the process. The vast majority of companies do use consultants. The selection of the consultant may directly correlate to which alternatives were evaluated or who initiated the reengineering effort (questions 16-18). There are two types of questions that ascertain the role of the consultant. One asks if the consultant remains with the project during the various stages (question 25, 37 and 49). The other (questions 19, 33, and 45) requests a weight of the relative importance of the consultant in each stage. This may provide help in ascertaining if reengineering efforts which consultants remain through implementation have better success ratios than those where consultants end their work after redesign is complete. Arguably, the consultant that leaves prior to implementation departs at the most critical

time because the change management issues seem to become relevant and more prevalent during this stage. The open ended questions requesting data on successes and shortcomings at each stage plus those dealing with what the company would do or suggest others do in the future offer the opportunity for comments regarding the consultant.

The interplay between the three main parties will be evaluated based on the comments in the open ended question portion of the questionnaire. The successes that are listed may point toward an underlying theme of cooperation and coordination between the three main parties. They may also indicate that the reengineering effort succeeded in spite of the people involved. There may certainly be a diverse set of answers to the series of questions, but I do expect some trends that may help uncover some common themes. The possibilities are numerous, but may break into categories such as weak senior management leadership-strong core team leadership, vice versa, or both could be strong or weak. The success or failure may correlate to these or other types of categorization. A disinterested third party may be the best data source. The likelihood that either the senior leader or the core team leader completes this questionnaire is high.

3.6. The Outcome

The outcome is important to this study in order to correlate the stages of the process, and the interplay of the three main parties to what works and what does not work. The focus of this study is the process and those involved. The premise is that when the process is performed well, within some parameters, which includes involving the right mixture of people as the three main players, the outcome will be successful. Shortcomings are a result of some problem with the process or the main players within

the process. Therefore, the actual successes are not as important as the attributes that led to the success. Conversely the same is true for the shortcomings.

Analyzing the attributes may lead to a categorization of similarities that on the one hand generally lead to success, while another group of attributes generally lead to some shortcoming. There is also the possibility that the attributes are random and depend more upon the culture of the organization. Should the variable to success become primarily organizational culture then the outcome may be difficult to predict. Structuring a predictive tool might prove difficult which may in turn be the rationale behind the reengineering effort.

3.7. Summary

The process of reengineering has two components that are highlighted in this study. One component involves the process itself, how reengineering is done. The second concentrates on who is involved in the reengineering effort. How the reengineering effort is conducted seems to be well documented. Each consultant company has a version of reengineering methodology that guides the company through the process. The process is distributed across three basic stages with the steps inside each step somewhat different. The structure of the teams, level of involvement and the terminology differ between the methodologies.

4. INSIGHTS FROM ANALYSIS OF RESPONSES TO QUESTIONNAIRES AND INTERVIEWS

4.1. Introduction

Four organizations, three service oriented and one manufacturer responded to the questionnaire and were interviewed. The second section describes the alternatives evaluated by the companies and why they selected reengineering as their performance improvement tool. Next, the influence of each stage's characteristics on the outcome of the overall effort is described. Another section focuses on the attributes of the three main parties involved with leading the reengineering effort. The interrelationship between the parties impacts the outcome in a revealing way. The last section discusses the characteristics that exert the most influence on the outcome.

4.2. Organizations Studied

A sample of four companies were surveyed. Three of the companies are in the service sector and one is a manufacturer. The industries represented include medical products, telecommunications, education, and contract research and development. The reengineering effort for the organizations range from one to five years. Three of the organizations employ between 2,000 and 5,000 with one organization having more than 5,000 employees. All see themselves as organizations in the category of "see trouble coming" although one believes it has since fallen into the "deep trouble" category. However, financial results do not yet indicate that this is, in fact, the case. Yet, internally, the organization feels its performance degrading rapidly. No organization responding to the survey, or for that matter any others that were contacted, would admit to having failed to achieve the goals initially set forth to justify

the expense and time for the reengineering effort. However, within their successful efforts, there were some shortcomings that may provide enough insight to draw some reasonable conclusions regarding failure.

4.3. Reengineering as the solution

Each company assessed their performance and determined that one or more of its core processes were inadequate for sustaining a competitive advantage. In one case, the processes selected were "the major processes within the internal control of the company that integrate to affect customers, costs and profits." In another case, "processes were selected because the existing processes were inappropriate for demands of the market place -- radical transformation of the organization was called for." In all four companies, the focus was on the needs of the customer. Processes were selected due to their impact on the customer in the form of service, cost, and satisfaction.

The goals that the companies hoped to achieve after implementing a performance improvement process were increased productivity, improved quality and increased customer satisfaction. Logically, achieving these goals will improve the profitability of the firm. They are also items that can be measured relatively quickly and easily to assess progress. The appealing claim of reengineering is the speed with which improvement is possible. These three goals are oriented toward rapidity. This indicates that reengineering was selected for the speed with which the change could be implemented.

The need for dramatic change must not be confused with the time frame for change. The time frame from initiation of reengineering through first implementation averaged

18 months. Successive implementations or the roll-out takes several years. In this study, the two companies that were beyond the initial implementation were continuing their roll-out 3 years later. The need for quick change may be overshadowed by the holistic nature of the change. Moving an organization in a new direction with new processes requires some time. It takes time to identify problems and determine the appropriate method to resolve them. In the worst case, for those companies in "deep trouble", the entire effort may take too long or be too severe. The personnel, time, financial, and other resource depletion required to gain the highest probability for success may cripple an organization. However, doing nothing may only exacerbate the problem. The retraining and communication for acceptance of the changes may take longer if there has not been a history of change within the organization. The benefits may not yield large financial benefits. One study suggests that business unit costs are reduced more when the scope [breadth] of change the greatest. Yet, the reductions, as high as 17% in the first quartile, are only 5% in the second.[1] One company in the survey was disappointed with their successful implementation when they discovered that the "savings in the largest process only matched anticipated inflation rate (4%); more savings is required." For these reasons, those that are most desperate to change may be the least suited to change.

Evaluating alternatives to solve the problems facing the management of an organization is difficult. Reengineering is another tool that is available. In all cases, the companies surveyed were either involved with or had evaluated the benefits of TQM or other continuous improvement processes. Surprisingly, three of the four had also evaluated activity-based costing as a way to improve their performance.

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[1] Hall, Rosenthal, and Wade, p.121.

The alternatives were evaluated according to a set of criteria. The respondents were fairly uniform in their desire to focus the redesign efforts around the customer, but were vastly different in their criteria for selection of an appropriate alternative to achieve the goals. The criteria for selection were: 1) time required for the change, 2) cost, 3) recurring impact on profitability, 4) applicability of the method to the organization or industry, and 5) integration of all activities across functional areas to meet company goals.

The most frequent answer given for selecting reengineering (chart 4-1) was the depth and scope of change for improved performance; all companies said that these were very or extremely important. Between these two, scope of change was slightly more important. The criteria for alternative selection and the reason for selecting reengineering (question 9 and 11) correlate well when the customer is the focus of the organization. If the customer is considered the central figure for a company's sales and profitability, then all systems should affect the product or the customer in some way. Under this assumption, the entire organization is affected by the changes taking place to improve customer satisfaction. Reengineering then becomes the method of choice because, in one respondent's words, it is the "cross-functional integration of activities to meet company goals, and a high probability of success if implemented." Reengineering offers a method for large-cross-functional change projects. It adds credibility to management's intuition that something is wrong and that drastic change is required.

4-1 Reasons for Selecting Reengineering

REASON FOR SELECTION	Not important	Not very important	Somewhat important	Very important	Extremely important
Scope of change				X	XXX
Depth of change				XX	XX
Speed of change			X	X	XX
Cultural change			X	X	XX
Clean slate approach			XX		XX
Drastic change		X	X	X	X

In many cases, senior level managers initiate the search for a suitable alternative. They often also decide on the selection of the alternative and establish the selection criteria. For all four companies the senior manager at the level which controls the assets within the organization's structure recommended reengineering as the solution to the problem facing the company. The initiator also made the final selection between alternatives.

The senior manager who controls the resources is the determining factor in which method is selected. The respondents in the survey indicate that a variety of sources influenced the initiator. Attending a workshop or seminar or reading about reengineering in a book or other publication were most often cited. A surprising response, "competitive reasons", was equally influential. This written comment was made by two respondents. I feel that all may have responded positively to this selection had it been included. Apparently, selection criteria are established by the nature of the problem to be solved. As stated earlier, the core processes being reengineered center around the customer. Alternatives are evaluated based on the perception of which tool or combination of tools provides the best solution.

Any of the major goals listed in question 6 are viable reasons to undertake any change project and all are achievable with some combination of the alternatives listed in question 8 (chart 4-2). The companies achieved some of their goals through the reengineering effort, but this is not to say that they would have fared better or worse using some other method. Conclusions from this set of data are difficult to make because the set is limited and a parallel test of two different methods on the same process is not feasible. An acknowledgment that the established goals are achievable through reengineering should suffice.

Chart 4-2 Expected Results and Alternatives Examined

MAJOR GOALS	YES	ALTERNATIVES	YES
Cut cycle time	XXX	Total Quality Management	XXXX
Cut costs	XXX	Continuous Improvement	XXX
Increased productivity	XXXX	Just-in time manufacturing	X
Improved quality	XXXX	Activity based costing	XXX
Reduce Inventory levels	X	Computer integrated manufacturing	X
Increase customer satisfaction	XXXX	Retrenchment	XX
Headcount reduction	XX	Process control or improvement program	XX
Improve-time delivery Performance	XXX	Continuous improvement methods	X
Increase profitability	XXX		

All respondents stated that selecting the right process was very or extremely important to the success of their reengineering effort. Coincidentally, the companies selected processes that were important for their particular type of business. The companies selected a single critical process and then several support processes that enable the core process to function properly. This set of companies selected customer related core processes as their focus. Processes that support the core process targeted for performance improvement include human resources and information services. All companies are reengineering these two processes as part of their effort.

4.3.1. Summary

Reengineering may not be the tool for all occasions or situations. This study is biased toward the reengineering alternative because each company chosen had conducted a reengineering effort. There are certainly situations that prevent the use of this tool or are better suited to another tool. However, reengineering offers an alternative to continuous improvement. Yet, reengineering may also be classified as an iterative process. Whereas some of the continuous improvement alternatives focus on improvements within each process, reengineering focuses on continually improving the company via one or several process. Two respondents said "reengineering never ends". This echoes the ideas put forth by continuous improvement programs. Reengineering has merit as a performance improvement tool.

4.4. Stages of Reengineering

4.4.1. Introduction

The stage of reengineering that may provide the most insight into the eventual success of the project is the implementation stage. However, the company may not need to wait until the implementation stage to determine the outcome. The selection of the core team and core team leader may give the necessary boost to the project for a more favorable outcome. The team embodies the reengineering effort. The attributes that determine a successful project may also determine a successful team. If the team is highly regarded and enthusiastic about the effort and change, they can easily convey this to the rest of the organization. The results indicate that the core team and senior leader had similar commitment, leadership, and visionary skills. These were important to successfully transition the company to the newly reengineered process.

4.4.2. Assessment

The assessment stage requires people on the team to understand the process selected for reengineering. They must understand the central issues and why the current process does not align with the new, vision or strategy of the company. This requires an introspective look that is both objective and subjective, balancing the need to be thorough and critical with compassion for the process in its present state. A facilitator may be helpful in this situation to help identify, structure, and resolve issues. Implementation may require certain skills to succeed. During the redesign stage and perhaps as early as the assessment stage, it is important to anticipate the challenges of implementation in order to determine the limiting factors to success.

The assessment stage of the reengineering effort is usually successful in finding problems that may lead to poor performance in the company. In this study, the initiator of the effort was able to correctly determine the changes needed to improve performance. Energizing the team and consultants while the project is still fresh and new is relatively easy. For each company surveyed, the initiator was extremely involved in the assessment stage (chart 4-3) They became less involved as the process moved through the remaining stages. This may reflect confidence in the core team rather than a reduction in support or commitment. The reason for commitment during assessment is reflected in one comment, "start with strategic goals and customer requirements and tie *all* activities in the company to them."

Chart 4-3 Level of Involvement Assessment Stage

PERSON OR GROUP	Not involved	Not very involved	Somewhat involved	Very involved	Extremely involved
CEO	A		A		A*
Division President			A		A*A*
CIO		A			A*
CFO			AA	A	A
COO		A	A		A
Management committee				AAA	A
Middle management			A	AA	A
First line management		A	A		AA
Employees performing the process		A		A	AA
Consultant				A	AAA
Core team				A	AAA

Key: A = assessment; R = Redesign; I = Implementation; * = Initiator

The characteristics chosen by the organizations as most affecting the outcome of reengineering were: 1) understanding and attacking the right problem, 2) senior management leadership, 3) core team selection, and 4) communicating change and the new vision. A summary, by priority, is listed on chart 4-4. Based on these answers it is apparent that having the most senior leader of the organization extremely involved in the assessment stage is the best way to ensure success in this stage. Additionally, the senior leader is the most influential person to communicate the need for change and the new vision. Selecting the core team is equally important. The two characteristics added by respondents underscore the importance of senior leadership and communication. The decisions in this early stage of the project impact the overall outcome of the project.

Chart 4-4 Priority Listing of Characteristics Affecting Assessment

CHARACTERISTIC	No effect	Minor effect	Some effect	Major effect	Extreme effect
Senior management leadership				X	XXX
Communicating change, new vision				X	XXX
Selection of core team				XX	XX
Understanding and attacking the right problem				XX	XX
Vision or direction that aligns effort			X		XXX
Commitment of time and resources				XXX	X
Selecting reengineering as the proper tool			X	X	XX
Solicit Key Stakeholders **					X
Senior Management enforce Behavior**					X

** Characteristic added by respondents

It is during assessment that the core team is selected and begins to understand the process and identifies possible areas for improvement. Additionally, team dynamics begin to unfold. How the team works together and how the team interacts with the rest of the organization becomes apparent. The core team and senior leadership begin communicating the need for reengineering, the changes involved and how the process or company may operate once the process is redesigned. This stage determines the impressions of the reengineering team and the emphasis placed on the project by management. None of these companies improperly identified the right process or failed to meet their objectives during this stage. The assessment stage may be traced as a potential root cause of the shortcomings during implementation, however, by itself it does not constitute the greatest potential for problems. Anticipating the requirements and challenges of the remaining stages will assist the organization in making decisions in this stage that positively affect the outcome.

Survey results indicate that, for the most part, the core teams "included the right people and skill mix". These efforts were very successful. Improper selection of the reengineering team manifests during the redesign and especially implementation stages and may result in a failure to achieve the desired results. Without strong leadership or the proper selection of the team, the project may not reach its full potential.

4.4.3. Redesign

In the redesign stage, chart 4-5, the companies unanimously agree that: 1) selecting the right process to reengineer and 2) core team leadership most affected the outcome of this stage. Senior management leadership remains an important indicator. The specifics of the redesign process, conceptualizing the new process and developing and validating the redesign, are not as important as one might expect. The people involved in the process of redesign are slightly more important than the actual output of the redesign.

Chart 4-5 Priority Listing of Characteristics Affecting Redesign

CHARACTERISTIC	No effect	Minor effect	Some effect	Major effect	Extreme effect
Selected the right process to reengineer					XXXX
Core team leadership					XXXX
Senior management leadership				XX	XX
Conceptualized dramatically new process				XX	XX
Develop and validate redesign				XX	XX
Thorough understanding of redesign process			X	X	XX
Communicate changes to those affected			X	X	XX
Negotiate changes with those affected			XX	X	X
Power to Redesign					X

The consultant and core team are extremely involved during this stage. Middle management was very or extremely involved (chart 4-6). Most of the companies included the employees involved in the process and first line management in the redesign process. One did not and complained that "people were defensive and protective of their areas". This company also worried about information leaks concerning the potential headcount reductions reengineering would induce.

Chart 4-6 Level of Involvement Redesign Stage

PERSON OR GROUP	Not involved	Not very involved	Somewhat involved	Very involved	Extremely involved
CEO	R	R		R*	
Division President		R		R*R*	
CIO			RR	R*	
CFO				RR	
COO		R	R		R
Management committee				RR	R
Middle management				RRR	R
First line management		R		R	RR
Employees performing the process	R			R	RR
Consultant					RRRR
Core team					RRRR

Key: A = assessment; R = Redesign; I = Implementation; * = Initiator

Allocating the proper resources and time to the redesign effort was a common theme that the companies conveyed should they undertake a reengineering project again. In one case, the core team was "not assigned full time" to the effort. They had to perform their core team duties alongside their other responsibilities. Several companies selected their core teams on the basis of "high management position". This selection process does not appear to affect the outcome either positively or negatively. It could prove detrimental in the redesign stage should the company decide to exclude

the process experts (people involved in the process and first line management). This combination may produce resentment and more resistance to change than anticipated. A degree of position power is important to making decisions and presenting the redesign to the constituencies involved.

Two comments that describe this stage particularly well reference the uncertainty and ambiguity faced by the companies as they attempted to reinvent their processes. The "inability to see the 'total picture' at all times" and the "inability to understand the long term consequences of some decisions" may hinder the effort. The companies were able to resolve this insecurity through the "conflict management skills" and "perseverance" of senior management and the core team.

Failure in the first two stages occurs when the senior managers fail to actively provide leadership and resources to achieve the goals they have established for the reengineering effort. The assessment and redesign stages are important in establishing the groundwork that will lead to the eventual changes in the process. These stages have the greatest chance for success. All of the companies surveyed agreed that these first two stages presented important challenges, but nothing approaching the magnitude present during implementation. The important factors to consider in the first two stages are senior management's active support and selection of the core team. Active support as defined by actions such as committing the resources necessary to achieve the objectives. Often the best and brightest people for each process are needed to give the necessary credibility and leadership to the effort. It also includes leading the campaign to overcome the resistance to change caused by the redesign. Verbal commitment is important but becomes passive support if no visible actions occur.

4.4.4. Implementation

Fortunately, most reengineering efforts transcend the first two stages successfully. In most cases, if a reengineering effort is going to fail it is in the implementation stage. Most comments from the surveyed companies referenced this stage. It was the stage of most concern and challenge. The implementation of the redesign became the focal point. Apparent success or failure is directly measurable at this stage. The work consumed by the project to this time becomes secondary to transition from plan to action.

The implementation stage, as one might suspect, has the most narrow level of involvement distribution. In this stage, the various groups within the company become aligned. As chart 4-7 shows, the core team, employees in the process, first line management, and middle management, and in most cases the consultant become extremely involved during this stage. The growing number of participants increases the difficulty of gaining consensus and maintaining the same level of communications. This stage forces action and commitment beyond the core team of people who have been intimately involved in the first two stages. Implementing the new process requires more involvement on the part of the process owners.

Chart 4-7 Level of Involvement Implementation Stage

PERSON OR GROUP	Not involved	Not very involved	Somewhat involved	Very involved	Extremely involved
CEO	I			I*	
Division President			I	I* I*	
CIO			I	I*	
CFO				I	
COO			I	I	
Management committee				I	I I
Middle management				I	I I
First line management					I I I
Employees performing the process					I I I
Consultant	I				I I
Core team					I I I

Key: A = assessment; R = Redesign; I = Implementation; * = Initiator

The added complexity caused by the growing scope of involvement is reflected in chart 4-8. The characteristics most affecting the outcome were: 1) communicating success and shortcomings and establishing corrective action, 2) ability to manage change, 3) gain and build momentum, and 4) senior management leadership. Although core team leadership was not a choice, it was highlighted as a reason for the successful transformation from redesign concept to implemented process reality.

Chart 4-8 Priority Listing of Characteristics Affecting Implementation

CHARACTERISTICS	No effect	Minor effect	Some effect	Major effect	Extreme effect
Ability to effectively manage change				X	XX
Senior management leadership				X	XX
Communicating success/shortcoming and establishing corrective action				XX	X
Gain and build momentum				XXX	
Ability to stick to the vision			X	X	X
Quick wins for success		X		X	X
Effectively reconcile issues			X	XX	

Implementation is arduous work that creates command and control issues. Reporting relationships may change. The migration from the old to the new is a shock to the culture of the organization. Change management issues are reason enough to limit the implementation to mediocrity. Reengineering is designed to solve business problems in a rapid and dramatic way. The core team is able to move quickly to create a new process design because they are few and committed to the change process. Moving the entire organization in a new direction is more difficult. It is during implementation that sticking to the vision, senior management support, communications, and quick wins become keys to successfully transform the process. One company advised "get some quick wins to get support". Another said that a "decline in intensity of communication with all concerned" lead to shortcomings during implementation.

The transition to the new process causes a resistance to change. As one company stressed "people within the organization accept the logic of why reengineering must be done and the impact on the customer but implementation is personally threatening." There tends to be an "overestimation of the *speed* at which change can take place" while at the same time an "underestimation of the negative impact of pockets of resistance". Two companies advise "do it [implement] quickly and move on." The core team's attributes and skills are most evident during this period. Their leadership, implementation skills, empathy and communication skills were cited as a means to help the companies cope with the ambiguity of change and build confidence in attaining a favorable outcome. The senior leader may help by giving more than the usual amount of support during this stage.

No company admitted to experiencing a reengineering failure, but all said that their goals or expectations were not achieved in some portions of the process. These shortcomings occur most during the implementation stage. In one company, "several

first designs of the reengineered process failed during implementation." Discussing this particular instance further, the "resistance to the changes created through reengineering swelled enormously". It was the leadership of the senior leader and the capability of the core team that brought about a successful outcome. The senior leader instilled "a measure of 'ruthlessness' on the part of management in pursuing pre-determined implementation goals." He also made "desired outcomes part of the performance assessment criteria of managers and staff." In all cases, some modification to the redesign occurred during implementation. Inevitably, completely changing a process will require adjustments which further complicates this stage.

The myriad of challenges in this stage arguably make this the most critical and important stage. Success cannot occur if this stage is not executed properly. Preparing for this stage during assessment and selection of the core team will provide a strong foundation for dealing with the stress and complication inherent during this stage. Communication was cited by most companies as the one thing they would do more of in the future. The ambiguity, uncertainty and continual modifications of implementation require "extensive and incessant communications" throughout the entire organization noted one respondent. It may be appropriate to develop a communications strategy with a formatted structure to guide the organization through this difficult and intense time. Communicating is important in all stages, but critical during implementation.

One company was concerned about "information leaks regarding headcount reductions." One of the outcomes associated with reengineering is the elimination of tasks that are non-value added and perhaps the reduction of staff performing these tasks. Without information leaking out of the group, anyone within the organization could read virtually any publication written about reengineering and discover that head

count reduction is one of the potential results. In contrast, some of the other companies openly discussed the probable reduction in staffing after the redesign was implemented. Interestingly, the first organization announced and implemented headcount reductions prior to the completion of the reengineering effort. In fact, this action occurred during the early stages of the redesign. Later, they cited "headcount reduction occurred prior to reengineering" as a shortcoming of the implementation stage.

4.4.5. Summary

The interactive and sequential nature of the stages suggests that all are required and all are important. However, the stage that provides the most difficulty for either a successful or unsuccessful reengineering effort is the implementation stage. This stage culminates the process of reengineering. The people affected by the redesigned process become involved in transforming the process and changing things that are familiar. The resistance to change is never so prevalent than during the period when it actually occurs. In all cases, the companies expressed the need to communicate more effectively and more often prior to the implementation stage. Regardless of the communications effort, it rarely seems adequate. Additionally, each company would have "involved the process owners" or "transferred more responsibility for the outcome" at an earlier date. Under these circumstances, the selection of the core team and the strength of leadership demonstrated by both the team and senior management are imperative to a successful outcome.

4.5. The Players

4.5.1. Senior Management

The leadership of senior management has a dramatic impact on the success or failure of the overall effort and is arguably the most important factor in determining the outcome of the reengineering effort. Senior management controls the allocation of resources, has the capacity to change the evaluation and measurement systems, or create excitement for the reengineering process. The senior leader who initiates the reengineering effort must also be one who has the ability to convince his or her peers that this project is required for the long-term vitality of the organization. The organization's perception of the importance of the project is based largely on the level of visible support from the most senior managers. The active support and interest of senior management is not always enough to ensure success, but without this level of support and commitment, the project probably will not achieve the anticipated outcome.

The senior leader of the effort happened to be the most senior person within the organization. Across all companies, the senior leader was perceived as a change leader. Other attributes included credibility, team player and visionary. One surprising response was the "interest in emerging organizational concepts" possessed by these mangers. The perception that a senior manager is a change leader may evolve from their interest in new concepts and techniques of organization and management. The person initiating the reengineering effort is the same person who studies emerging methods. The assessment of the problem and evaluation of alternatives may have

occurred during their study of new concepts. This finding underscores Eric von Hippel's lead user theory[2] applying his concept to business practices.

4.5.2. Core team

The selection of the core team by the senior management is the second most important aspect of the project. The people selected for the core team must be perceived by their peer group, the organization, and senior management as credible to create a sense of priority for the outcome. Selection criteria for all companies required members to be change agents and possess change management skills. Process knowledge and management level were also important. The level of management is striking. Often, selection criteria included the set of traits that the company believed would help them successfully complete an effort of this magnitude. Many of these traits were similar to those used to select managers for the company. To require a certain management level in order to be a member is unique. Perhaps the sensitivity of the issues involved and the scope of the required change suggest that management level become an important consideration.

The criteria for selection often required the company to send the best people to the project. Subordinating the functional units' performance in order to improve the organization is an issue that functional unit managers must address during the selection process. One organization that elected to put its best people on the project felt that they "had greater success in a shorter period of time." Additionally, they "discovered that other people stepped-in to fill the gaps with impressive results."

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[2] For a complete discussion of lead user and their impact on technological innovation, see von Hippel, Eric, *The Source of Innovation*, Oxford University Press, 1988.

Once selected, the core team for all companies remained together throughout the entire process with one exception. This one exception was a minor change that the company said did not impact the outcome. There is insufficient data to suggest that core teams which stayed together through the entire process had a greater chance for success. Other arrangements may work equally well under certain circumstances. Splitting the redesign team and the implementation team may allow rotation to reduce resistance to change. The caution in this second arrangement is that communication and coordination between teams is critical. But, splitting the teams may allow a company to concentrate resources in the best possible way. The implementing skill set is somewhat different from the redesign skill set. The leadership of the two team approach, if this path is chosen, must define roles and responsibilities, resolve command and control issues yet overlap constantly.

The team should be able to move from redesign through implementation and have the change management skills necessary to deliver the finished product. The skills necessary to meet the demands of success are many and the attributes that surround this type of person are important to understand. The leaders must be respected by their peers and have the political connections to move the company in new directions. Yet, they should be able to consider new alternatives and solutions to existing problems. This is a difficult match to achieve; an insider who thinks like an outsider. Someone who can make changes happen while keeping the various groups satisfied. Communicating, negotiating, and interpersonal skills become the foundation for such an activity.

In the study, the leader and those selected for the team possessed individual and collective leadership, along with coordination, and communication skills. The senior leadership and the core team are similar in their attitudes and abilities. It is fairly

obvious that members of the core team have the ability and attributes necessary to become senior leaders in their company. The attributes described most often include: good communications skills, respected by peers and senior management, results-oriented, dedicated, inspirational, enthusiastic, knowledgeable, competent, ambitious, analytical, and desirable to work with. The groups are experienced in their field and have been in the company for some period of time. They are all insiders, but have the ability to take the objective view of an outsider. Reengineering fails when the core team does not work well together, does not have effective leadership, or enough influence to move the organization forward.

4.5.3. Consultants

Every company used a consultant to guide them through the process of reengineering. Consultant companies were selected based on having the best performance record and best reputation for reengineering. An interesting point is that each organization used a different consultant. Four different companies, each using a different consultant and each consultant was perceived as having the best performance and reputation for reengineering. Perhaps it is, in one manager's words, "their ability to package and format presentations to meet the needs of senior management; they have credibility as an outsider." This finding alludes to the ease with which an idea or concept can be proliferated throughout many types of organizations.

Consultants provide a service beyond their transfer of a methodology. They allow the core team and senior management to try different ideas by leveraging the knowledge consultants have gained during previous engagements. Many consultants have been on several reengineering projects and can help during periods of discomfort. The consultants at three of the four companies studied remained with the reengineering

effort through implementation. There is not a discernible difference in performance but, whenever the consultant is present they are extremely involved. The sample size is too small to draw conclusions between these two approaches. By concluding that implementation is the most critical stage, consultants that depart prior to implementation leave at the most challenging time. The challenges faced during implementation are sometimes more easily resolved through outside intervention.

4.5.4. Interrelationship Between 3 Major Parties

The attributes delineated for the senior leader, core team leader and core team are strongly similar within each organization and roughly similar between organizations. Between organizations the composition suggests that the senior leader is a credible, visionary change leader. The core team leader is a team player, visionary, leader. The core team is committed, open to change and team-oriented. The differences between companies are nuances based on the culture of the organization. Some are more aggressive while others are subdued in the method of attacking problems. However, leadership is a key attribute for both the senior and core team leader. The members of the core team may possess leadership skills but these are not highlighted. The team members bring the process knowledge and willingness to redesign the existing processes.

The process of change creates tension in the organization. Successfully completing the reengineering effort is arduous for the team and the organization. The team and leader often must urge the company in uncomfortable directions while confronting departments and people who have considerable leverage within the organization. When the reengineering process fails, leadership becomes a focus of analysis. The leadership of the project and the implementation are both at fault for not achieving

success. Whenever there is a success, the strong leaders are credited with making the right decisions at the appropriate time. Perhaps the most important decision in the reengineering effort is selecting the group responsible for the redesign and implementation.

If the senior leader spends less time involved in reengineering the results lag expectations. Organizations that have been successful have fallen into two categories: those which select a team and its leader based on the combined abilities to design and implement; and those that form revolving teams that initially have people with strengths in design who are replaced later with others who are strong in implementation. Chart 4-9 depicts the typical outcome in relative to the interrelationship of senior leadership and core team leadership. When the core team leads the redesign effort and has the skills to perform the implementation, the project is successful. In cases where the senior leadership is present but the core team leadership is not up to the task, the results are less than expected.

Chart 4-9 Core Team Leadership - Senior Leadership Outcome Matrix

CORE TEAM LEADERSHIP	***SENIOR LEADERSHIP***		
	STRONG	**MEDIUM**	**WEAK**
STRONG	**Success**	**Success**	**Partial Success**
MEDIUM	**Success**	**Partial Success**	**Failure**
WEAK	**Change Team Skill Set**	**Partial Success**	**Failure**

When the senior leadership is not in place but the core team is strong, some gains can be made, but not the radical improvements one expects. The gains are more in line with continuous improvement objectives. When neither is in place, the project will

probably not begin. When both are strong, the potential for success is greatest. There are other areas of gray, but the trend is definitely in favor of success following strong leadership at both levels in the reengineering project.

Reengineering requires leadership at the highest levels within the company. Equally important is a secondary level of leadership at the implementation level to ensure that the project achieves satisfactory results. The reengineering result is less effective when the leadership support wanes or when the core team does not have the ability to lead the transformation. Success requires both levels of leadership to be strong. This points toward core team selections as an important criteria for success. The core team should be composed of people who understand the current process, yet understand the need for change and are willing to develop creative ways to meet the needs of the process for better company performance.

Possessing the interpersonal skills without the leadership skills may allow some changes to be completed but may not allow for the tough decisions such as downsizing. Handling the people issues is a key to the process. The proper treatment of the people within the process undergoing the change is key to gaining their acceptance and cooperation. "Successful implementation of process innovation[reengineering] depends on consciously managing behavioral as well as structural change, with both a sensitivity to employee attitudes and perceptions and a tough-minded concern for results. This combination is difficult to come by."[3]

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[3] Davenport, Thomas, Process Innovation p. 167.

4.5.5. Summary

Certainly there is more than one single reason for the favorable or unfavorable outcome of a reengineering effort. However, I believe that the studies and information gathered indicate a strong correlation between success and leadership at the two levels (chart 4-9). The impact of a sound communications program in support of the effort assists with the transition. The change management issues that surround the entire concept of reengineering suggest the generous use of interpersonal skills. Perhaps the companies that are most successful are those that have moved along the continuum of total quality management and continuous improvement. Companies that have previously engaged in some systematic change process may have developed methods to better embrace the radical change inherent with reengineering.

4.6. The Outcome

The attributes that generally lead to success are not random. The degree to which each is important to the companies studied may reflect each organization's culture. For all companies, the organizational, personal or other attributes that lead to success in each stage included senior manager (the initiator) leadership, willingness to change, and constant communications. The attributes of the shortcomings included inexperience and a decline in or lack of communication.

Leadership is a key element in the success of the project. Across industries, environments, and companies the overwhelming critical success factor was leadership. Leadership is required at all levels . The senior manager must visibly demonstrate his/her commitment to reinforce the importance of the process. Aligning the

evaluation and performance measures with the desired outcomes provides an adequate first step.

Leadership by the core team is an important attribute leading to the successful completion of the redesign stage. It is important during the implementation stage but is overshadowed by senior management leadership. The core team's implementation skills as well as project management skills are important. As mentioned before, senior management's willingness to have "a measure of ruthlessness in pursuing pre-determined implementation goals and changing the measurement criteria for management and staff to align the results with the performance evaluation of management" is a strong signal that senior management is serious about the successful outcome. When senior level managers initiate the change process and offer reengineering as the alternative of choice they are more likely to become a strong supporter of the change process. Any change process requires a significant level of support from senior management. The most successful efforts in this study had a high level of support and that support came from the initiator of the effort. The initiators of the reengineering process were familiar with both the benefits as well as the downside risks.

There is a dual level approach in the implementation stage that promotes success. The senior leader takes care of the organization-wide resistance, the vision, and actively supports the implementation effort. The core team takes charge of the implementation, project management and communications responsibilities. In this way the senior leader is responsible for the acceptance and support from the strategic players and the organization as a whole, while the core team responds on a more tactical level establishing quick wins, resolving conflicts, and negotiating modifications to the design. The project management skills possessed by the core team include

"scheduling" and "priority setting". The leadership skills include "consensus building", communications and "conflict resolution skills". Without both parties extremely involved during implementation, the effort may not reach a successful conclusion.

The shortcomings fall into two categories; the decline or lack of communication and inexperience on the part of the entire team. The team's inexperience falls into two categories: first, the scope of the change is something the organization has never confronted, and second, inexperience with reengineering. There is little consolation for the inexperience with reengineering except that the consultant generally has more experience than the company and should assist through this weakness. This further suggests that the selection of the consultant is important to the outcome and should remain with the effort through implementation. Perhaps the most difficult issue encountered regarding the scope of change is "to balance the demands made on staff [the entire organization] for change related activities, with continuing to meet current customer needs". Setting priorities may be more difficult when one is short term and tangible (a current customer need) and the other is longer term and intangible (process redesign). One company suggests that the inexperience problem may be overcome by spending "more time learning from the experience of similar organizations". This is noteworthy, as it may provide an insight that may alleviate some of the frustration and resistance associated with reengineering.

5.0. RECOMMENDATIONS, CONCLUSIONS, AND AREAS OF FUTURE STUDY

5.1. Introduction

This final chapter offers recommendations to companies that are currently involved in or planning a reengineering effort. They are a culmination of the analysis from chapter four. Each recommendation is supported by a discussion of the related issues. The recommendations are categorized by topic and are not in order of importance because each organization will determine its own priority. The categories align with the structure of the entire thesis; 1) reengineering as the solution, 2) the stages, 3) the players, and 4) general findings. Lastly, as much as I have learned and discussed, there remain more areas to study in the future.

5.2. Reengineering is the Solution

The two recommendations in this section offer reengineering as an appropriate alternative for some processes and companies. Understanding which process and set of circumstances best facilitate the reengineering approach enhances success.

1. **Recommendation:** Reengineering is the best alternative for completely overhauling a process. The favored situation for selecting reengineering is whenever the company can "see trouble coming" and has the opportunity to react quickly, but thoughtfully.

Reengineering is the best alternative for completely overhauling a process.

Reengineering is more rapid than continuous improvement. However, the process is painful and not as rapid as one might imagine. In the companies studied, implementation for the first process took between 18 months and several years.

Reengineering is best applied to situations in which the business conditions strongly suggest that to remain competitive, a more efficient use of resources is required within a relatively short time frame. The companies interviewed for this study clearly indicate that they felt pressure from market forces to improve customer related aspects of their business in the short term. This pressure is translated into the compelling case for change which energized the organization to change the core customer process and supporting processes that were inadequate.

The companies in this study initiated their reengineering efforts when they were in the "see trouble coming" category. In situations where the company is in "deep trouble" there may not be enough time or the cultural or leadership factors may not be in place to focus on the type of change that is required to save the company. The best people will most likely be assigned to solve the more immediate problems and have little time to improve the process. Organizations that are in peak condition may find that this tool is too strong. Although they may not need to start from a clean slate, instead they can take their best processes and improve them.

2. **Recommendation:** Select the process that will most improve the performance of the organization from the customer's viewpoint. The bottom line results will follow.

Organizations in this study selected processes that were important to the positive performance of the organization. Processes selected for reengineering were cross-

functional and had customer implications effecting many parts of the organization. This helped to focus attention and resources to improve the process. The rationale for reengineering was much easier for the organization to understand and accept in light of potentially reduced competitiveness. Goals established for the reengineering effort were easily recognized when the selected process was visible and important to the organization. The downside to this approach is the possible consequences of failure. Important processes create a rallying point for the organization. However, the challenges may be greater due to the sensitivity of the organization to a failed outcome, but the associated rewards are correspondingly higher.

5.3. Stages

Each stage of reengineering builds upon the decisions and actions of the previous one. However, the importance of the implementation stage has been described by every respondent as critical to the success of the effort. Establishing the team and planning the effort should be influenced largely by this stage. This section provides recommendations to this end.

3. **Recommendation:** Success or failure will be determined during the implementation stage. Recognize the importance of the implementation stage prior to beginning the reengineering effort and prepare for it during the earliest stages of the effort.

Assessment and redesign stages have a high success rate. Reengineering methodologies and assistance by consultants facilitate the process of creating a new process. Although the coordination, negotiation and communication of the changes to the current process are difficult during these stages, the actual transition to the new

process during implementation bare the weaknesses of the effort. During implementation any shortcomings in the redesign, the communications, and the leadership are amplified.

The other stages have a strong influence on the outcome. How the redesign effort is conducted, the people involved on the team and the leadership of the project are important considerations. Relationships between the three main players and the rest of the organization are developed during the earlier stages. Any interactions that they have with the rest of the organization, either positive or negative, will affect their ability to act or react to the dynamics of implementation. Reengineering is a change management program and the main parties must look toward implementation at all times.

4. **Recommendation:** Ensure that the selection criteria for the parties involved include the skill set that is needed in each stage of the reengineering process; especially implementation.

The criteria for success of each stage revolves around the interrelationships between the three main players. The influence of the senior leader, the core team and the core team leader along with the consultant shape the reengineering effort. So long as they remain committed, unified, and aligned with the established vision, the project has a higher possibility for success. Whenever they begin to present conflicting directions or goals, the effort slows down while the organization sorts out the roles, responsibilities and power structure.

Selecting the process is important to the outcome of the reengineering effort. Equally important is the selection of the people who will redesign and lead the organizations

through the process of change. The holistic nature of reengineering makes it impossible for one person to conceive and direct the process. It is by necessity a team endeavor. Staying on course and presenting a unified approach to achieve the established vision is a challenge for the three main parties. The organization must have the impression that the parties are working in their best interest. Failure to create a predictable, coherent plan that will achieve performance results on critical metrics will undermine the entire reengineering process.

During the assessment stage the three main parties must gain a thorough understanding of the conditions facing the organization and the changes that must justifiably be taken in order to remain a healthy and viable entity. The depth and comprehension of their understanding influences decisions on which process or processes are most critical to improve for the overall benefit of the organization. This information also serves as the window to the interrelationships between the various functions. The redesign stage forces the parties to translate the vision into the new process. Their ability to query process owners, elicit support throughout the organization, and communicate the proposed redesign are imperative to the success of this stage. Implementation takes the product of the first two stages and transforms it into reality. The foundation that the team has prepared within the organization during the first two stages will dictate the outcome during implementation. If the team has poorly prepared the organization for the changes or alienated the process owners, implementation will be more difficult and not as fruitful.

5.4. Players

The skills of each major party and the interrelationships between them are key to the success of the effort. Reengineering is unlike other performance improvement

alternatives because it recommends an overhaul of the existing processes. Change of this magnitude is successful only when senior management is actively involved. The interrelationship between those leading the effort from within the organization is arguably the most important indicator of the outcome. Additionally, any organization that undertakes reengineering must understand the role of the consultant.

5. **Recommendation:** The senior leader should be someone who is actively committed and supports the reengineering effort and can visibly influence the organization in the desired direction without controversy over authority or responsibility.

Senior leadership and commitment is key. The reengineering effort will not be successful without strong support from the highest levels in the organization. Senior leadership support is obviously important to any major change that an organization is undertaking. The appropriation of relatively large amounts of capital requires a presentation of justification and rationale for the project. Reengineering is intended to change the structure of at least one process and probably more. Beyond changing the structure of work, reengineering will change the structure of the organization. For this type of change, the approval and support of senior management is critical.

The type of commitment and support is important. Active support is more important than passive support. Active support and commitment requires action on the part of senior managers while passive support entails a more tentative attitude. Because the reengineering effort should select a critical process, the senior leader should be someone with responsibility and authority for a cross-functional span of control. Given this criteria, this person usually resides at the very top of the organization such as a division president or CEO.

6. **Recommendation:** Selection of the core team and team leader are equally important to having senior management support and selecting the right process.

The core team and team leader have the most influence on how the process owners and others closer to the process being reengineered perceive the effort. Important characteristics and influence already discussed regarding the senior leader are exerted by the core team and team leader on the lower parts of the organization. The core team becomes the conduit for information up and down the levels of the organization. They usually influence the decision around process redesign, implementation and allocation of funds to incorporate the necessary changes. Leadership, communication, negotiation, and interpersonal skills are the attributes that best describe the composite core team. With this combination the people on the team can accomplish the arduous task they have been selected to perform. Organizational culture influences how and to what degree each of these four skills is utilized, but these are the essential attributes. Leadership includes the creating or accepting the vision and developing a plan to achieve the established goals. Communications and their importance will be discussed in a later section, but they are essential to a favorable outcome. Negotiating the requirements of the current process alongside the vision for the new process brings the process owners into the process at a much earlier stage. Interpersonal skills are crucial to effectively dealing with the people and issues surrounding changes to the work and organizational structure. Select members for the team that possess some of all these skills, mixing and matching so that the team has at least one person with strength in each of these attributes.

7. **Recommendation:** Recognize the influence and interdependency between the senior leader, core team, and team leader. Understand that for the best success,

both the senior leader and the core team are part of a two-tier leadership approach (chart 4-9).

Combining the previous two conclusions leads to a two-tier leadership approach for the best success in the reengineering effort. Senior management leadership is important in order to convince the organization of the need and importance of improving performance and allocating the necessary resources to achieve the objectives. The core team and team leader influence the lower levels of the organization and help reconcile the issues that face process owners.

Chart 4-9 Core Team Leadership - Senior Leadership Outcome Matrix

CORE TEAM LEADERSHIP	***SENIOR LEADERSHIP***		
	STRONG	**MEDIUM**	**WEAK**
STRONG	**Success**	**Success**	**Partial Success**
MEDIUM	**Success**	**Partial Success**	**Failure**
WEAK	**Change Team Skill Set**	**Partial Success**	**Failure**

Chart 4-9 suggests that projects that are more successful have both senior leaders and a core team that are strong. Projects that are less successful, have a mixture of strength and weakness in these two positions. Although there are no examples of this, I predict that in situations where both the senior management and the core team are perceived as weak, the greatest failures occur. To further delineate the middle ground, I submit that the senior leader is the more important party. The senior leader who is strong may have improperly selected a core team leader or members of the team. This group can be disbanded or restructured to include members who align more closely with the culture of the organization or who better understand the vision. Restructuring the team

may have a short term negative effect on the project, but will increase the probability for success in the long term. In situations where the senior leader is the weak link, it may be more difficult to make changes. In most cases, I believe the changes would take more time and perhaps lead to replacing some members of the core team.

9. **Recommendation:** The consultant is a valuable advisor to the reengineering team offering experience, knowledge, and credibility to the process.

Reengineering is an emotional event for any organization. Use an outside consultant to initiate the organization's change process. A consultant provides an outside view while serving as a credible source to interface with senior management. They bring knowledge from a variety of industries and situations, then synthesize this information into a form that is understandable to senior management in a relatively short time span. Additionally, they provide an informal means to test ideas and approaches with various levels of the organization with less fear of reprisal or retribution. They act as a buffer between the various parties. Consultants test a variety of approaches in differing environments and thus, have related experience from which to draw. Since the organization is paying a fee for their services, they are more likely to stay on the schedule determined at the outset of the project. The consultant acts as a forcing mechanism to keep the project on track and span the boundaries between the various layers of the organization. Their knowledge and experience base enables them to analyze the situation and recommend a variety of approaches to meet the culture and structure of the organization. They are a valuable member of the team, however, they are only an advisor and should be regarded as such.

5.5. General Findings

This group of findings, with the possible exception of one, reiterate some well known management principles. Of interest is the fact that the organizations studied, along with others uncovered in the literature search, specifically mention these findings. Those that failed to follow these principles wished that they had; those who followed them, said they could have done more.

10. **Recommendation:** Develop a communications plan during the assessment stage with an emphasis on thorough and persistent communication. Delineate roles and responsibilities for all parties involved, not just the three main parties.

All organizations said that they wished that they had "communicated more effectively, more often, and more emphatically" concerning the need for change, what would and would not change, and how they were going to handle the transformation. The change process is unsettling for all involved. Learning the new process or wondering about any number of unknown things is unsettling.

Communication is the strongest weapon against the fear of change. Several sources cited in earlier chapters emphasize this same aspect of the project. Some suggest the need for a coordinated communications campaign to keep the organization informed and focused. Constant communication not only tempers the resistance to change, it also builds understanding and support for the effort.

11. **Recommendation:** Involve the process owners from the earliest possible time by selecting a first-line manager and an employee from the process to become part of the core team.

Changing the process because it is not efficient enough or may not meet the new vision is difficult for someone who is part of the process to accept. It almost implicates them as part of the problem with the organization. This is far from the case, but the perception may linger. For this reason, the way the three main parties deal with the process owners is crucial to the perception and eventual acceptance and success of the reengineering effort. The majority of the improvements will impact those closest to the process. Therefore, the process owners must be an integral part of the change leadership.

People that might be affected by the changes to the process must be represented during the earliest discussions. This includes creating the vision and assessing alternatives to achieve the vision. They definitely must become part of the team once the process to be reengineered has been selected and the redesign stage begins. The roles and responsibilities for the parties involved can then be delineated and expectations set. This may remove some of the difficulty experienced during the implementation stage. Beyond involvement, the process owners must become part of the change management group. During implementation this role and responsibility will be cast upon them regardless of their desire. One prevalent shortcoming from the study is the desire for the process owner to take more responsibility for deriving, accepting and implementing the changes to their process. Engaging the process owners early in the process by including them as an integral part of the core team may help overcome their resistance to change.

12. **Finding:** No company will admit that they have not achieved their reengineering objectives.

Although Hammer and Champy suggest that between 50% and 70% of the companies undertaking reengineering have failed to meet their objectives, admission of failure is uncommon. I expected that the number of failures would provide adequate opportunity to analyze where the weaknesses of reengineering resided. Instead, I had to infer based on the absence of failure. Obviously, few want to openly discuss their shortcomings, but without a debate as to what caused the deficiency, others will invariably fall helpless into the same traps. With the current fervor over reengineering no one wants to admit that they were the ones who could not change their organization to adequately address their competitive shortcomings.

5.6. Areas for Future Study

The reengineering process is complex and involves many interrelated factors. This thesis has looked at a limited number of organizations to understand the stages and players involved in influencing the outcome. Several questions remain unanswered about the process that include:

Are the factors influencing the outcome similar in firms around the world?

Some of the indications from the analysis suggests that the culture of the company influence the selection of the core team and team leader. As the business climate changes, what influences does the culture have in the reengineering process that are not transferable across borders?

Is the change lasting?

Reengineering is still relatively new. Many processes have been changed but the impact of those changes and their permanence are in question. The amount of resources and effort that are involved suggest that some pay-back period is necessary to justify the expenditure. The return to the company on the investment in reengineering should occur prior to undertaking the next performance improvement initiative. Additionally, the organization must, at some time, return to a routine utilizing the new process. Continuous improvement techniques return to prominence as the process stabilizes. What is the time period before the next major shift in competitiveness drives the organization to reengineer again? And, can management take steps to avoid future reengineering efforts recognizing what is entailed in such a major undertaking?

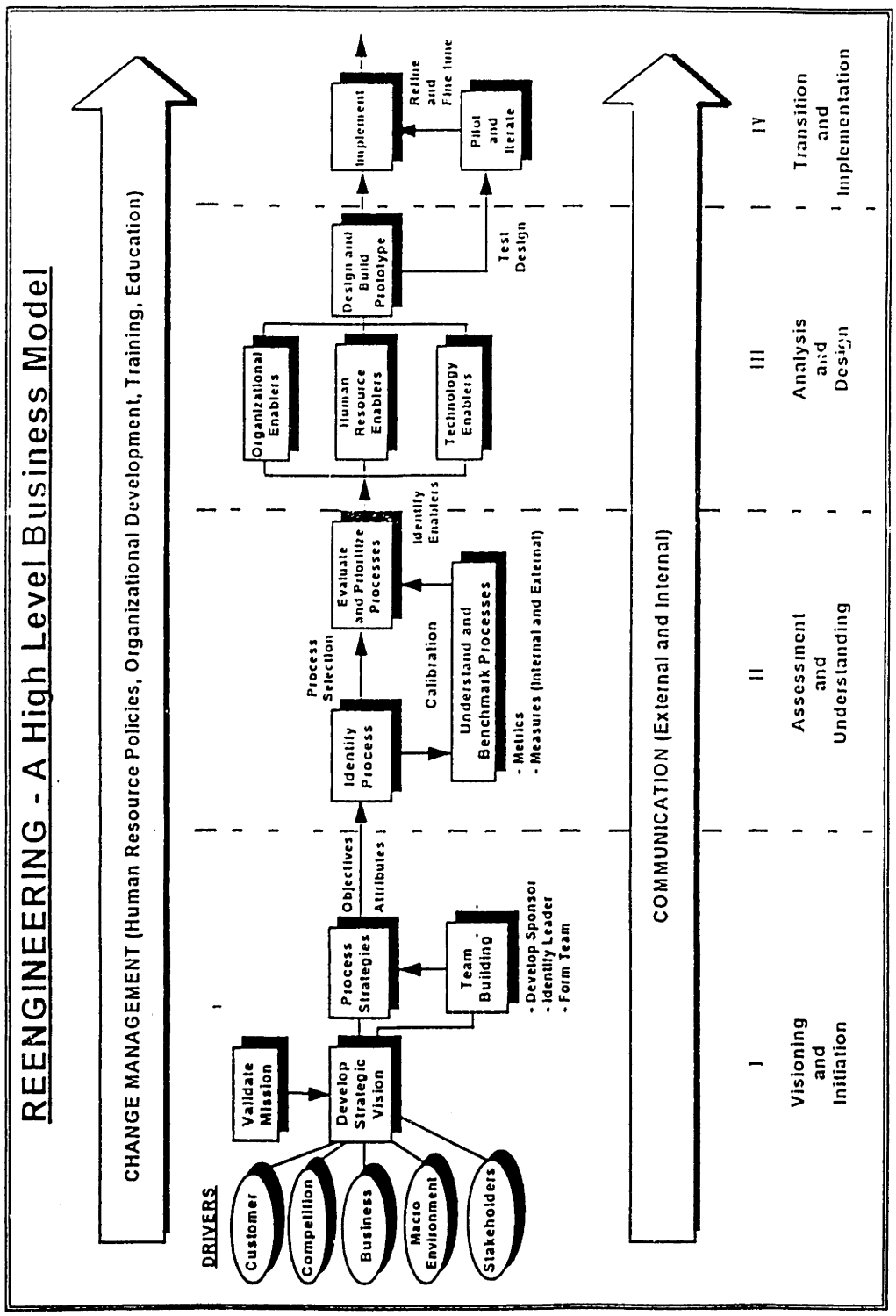
5.7 One Final Word

Modifying a company or set of processes to meet the requirements of emerging markets and technologies is continuous. Reengineering is a change management tool. The lessons learned from this study are applicable regardless of the tool employed to construct the change. Change management is the art of leadership, communication, negotiation, and forging strong interpersonal relationships. Reengineering is a process that can be strong medicine for change, but without the right people, it is ineffective in treating the ailments.

In the end, reengineering remains a tool that management may use to move their organizations in a new direction. It modifies the organizational structure towards cross-functional teams. The next iteration may require the integration of information

and processes across divisions and companies. These new organizational structures may involve a similar degree of radical change. The skills that are learned from those that reengineer their businesses may provide a foundation from which to build the new organizations of the future; cross-divisional, cross-cultural, and geographically unlimited. Whatever form these new organizational structures take, people and the culture of the organization remain the most important element in the change process. Leadership is the foundation for establishing the culture and helping people successfully transition to the new paradigm.

APPENDIX A[1]



[1] Misser, p. 62.

APPENDIX B

REENGINEERING QUESTIONNAIRE

1. Type of business or industry:

2. Number of employees:
   1-500 ☐ 501-2,000 ☐ 2,001-5,000 ☐ 5,000 and above ☐

3. Who within the organization initiated the reengineering effort?
   CEO ☐ Division President ☐ CIO, CFO, COO ☐ Other, please list position

4. Approximate date reengineering effort started: ___/___/19___

5. Approximate date reengineering effort finished: ___/___/19___

6. What major goals did you expect to achieve after reengineering?

	YES	NO
Cut cycle time	☐	☐
Cut costs	☐	☐
Increased productivity	☐	☐
Improved quality	☐	☐
Reduce Inventory levels	☐	☐
Increase customer satisfaction	☐	☐
Headcount reduction	☐	☐
Improve-time delivery performance	☐	☐
Increase profitability	☐	☐

7. Who or what prompted the companies interest in reengineering?

	YES	NO
Management Decision	☐	☐
Information or results from other firms	☐	☐
Attended workshop or seminar	☐	☐
Book or other publication	☐	☐
Consultant's presentation	☐	☐

8. What alternatives did you examine?

	YES	NO
Total Quality Management	☐	☐
Continuous Improvement	☐	☐
Just-in time manufacturing	☐	☐
Activity based costing	☐	☐
Computer integrated manufacturing	☐	☐
Retrenchment	☐	☐
Process control or improvement program	☐	☐
Continuous improvement methods	☐	☐

9. What were the criteria for evaluating alternatives?
   1.
   2.
   3.

10. What level made the decision to select reengineering as the best alternative?
    CEO ☐ Division President ☐ CIO, CFO, COO ☐ Management Committee ☐

11. Reasons for selecting reengineering:

Need for:	Not important	Not very important	Somewhat important	Very important	Extremely important
Speed of change					
Drastic change					
Depth of change					
Scope of change					
Clean slate approach					
Cultural change					

12. How many major processes are in your company?
    1-5 ☐ 6-10 ☐ 10-20 ☐ 20 and above ☐

13. How many processes were involved in your reengineering effort?
    1-5 ☐ 6-10 ☐ 10-20 ☐ 20 and above ☐

14. Which processes were involved?

	YES	NO
Customer Order Management	☐	☐
Supply Chain Management	☐	☐
Customer Service	☐	☐
Financial Management	☐	☐
Production Management	☐	☐
Information Services	☐	☐
Human Resources	☐	☐
Others, please list	☐	☐

15. Why these processes?

16. Did you use a consultant? ☐ YES ☐ NO

17. Which consultant?

18. Why did you select this consultant?

	YES	NO
Previous relationship	☐	☐
Best suited for my industry or company	☐	☐
Best performance record	☐	☐
Best value	☐	☐
Remain with project through implementation	☐	☐
Best reputation for reengineering	☐	☐
Most comprehensive skill set	☐	☐
Others, please list	☐	☐

I. Assessment Stage (Analyze business situation and recognize need for change, select method of change, and gather resources to affect change)

19. What was the level of involvement for each group during this stage?

	Not involved	Not very involved	Somewhat involved	Very involved	Extremely involved
CEO					
Division President					
CIO					
CFO					
COO					
Management committee					
Middle management					
First line management					
Employees performing the process					
Consultant					
Core team					

20. What criteria were used to select the core team from your company?
    1.
    2.
    3.

21. What were the unique attributes of the senior manager(s) leading the effort?
    1.
    2.
    3.

22. What were the unique attributes of the core team leader?
    1.
    2.
    3.

23. What were the unique attributes of the team?
    1.
    2.
    3.

24. What characteristics of this stage most affect the outcome of reengineering?

	No effect	Minor effect	Some effect	Major effect	Extreme effect
Understanding and attacking the right problem					
Selecting reengineering as the proper tool					
Commitment of time and resources					
Senior management leadership					
Selection of core team					
Vision or direction that aligns effort					
Communicating change, new vision					
Please list others					

25. Did you use a consultant during this stage? ❒ YES ❒ NO

26. What were the 3 successes* during this stage?
    1.
    2.
    3.

27. What organizational, personal, or other attributes led to success?
    1.
    2.
    3.

28. What were the 3 shortcomings* during this stage?
    1.
    2.
    3.

29. What organizational, personal, or other attributes led to these shortcomings?
    1.
    2.
    3.

30. What would or should the company do next time?

31. What would or should the company avoid next time?

32. What advice would the company offer to others beginning their reengineering effort?

II. **Redesign Stage** (documentation and analysis of current process and redesign)

33. What was the level of involvement for each group during this stage?

	Not involved	Not very involved	Somewhat involved	Very involved	Extremely involved
CEO					
Division President					
CIO					
CFO					
COO					
Management committee					
Middle management					
First line management					
Employees performing the process					
Consultant					
Core team					

34. Did the core team change configuration during this stage? ❒ YES ❒ NO

35. What attributes of the core team were most effective during this stage?
    1.
    2.
    3.

36. What characteristics of this stage most affect the outcome of reengineering?

	No effect	Minor effect	Some effect	Major effect	Extreme effect
Selected the right process to reengineer					
Thorough understanding of pre-redesign process					
Conceptualized dramatically new process					
Develop and validate redesign					
Communicate changes to those affected					
Negotiate changes with those affected					
Senior management leadership					
Core team leadership					
Please list others					

37. Did you use a consultant during this stage? ❒ YES ❒ NO

38. What were the 3 successes* during this stage?
    1.
    2.
    3.

39. What organizational, personal, or other attributes led to success?
    1.
    2.
    3.

40. What were the 3 shortcomings* during this stage?
    1.
    2.
    3.

41. What organizational, personal, or other attributes led to these shortcomings?
    1.
    2.
    3.

42. What would or should the company do next time?

43. What would or should the company avoid next time?

44. What advice would the company offer to others regarding the redesign stage?

III. Implementation Stage (transforming the redesign into reality; pilot and roll-out)

45. What was the level of involvement for each group during this stage?

	Not involved	Not very involved	Somewhat involved	Very involved	Extremely involved
CEO					
Division President					
CIO					
CFO					
COO					
Management committee					
Middle management					
First line management					
Employees performing the process					
Consultant					
Core team					

46. Did the core team change configuration during this stage? ❒ YES ❒ NO

47. What attributes of the core team were most effective during this stage?
    1.
    2.
    3.

48. What characteristics of this stage most affect the outcome of reengineering?

	No effect	Minor effect	Some effect	Major effect	Extreme effect
Quick wins for success					
Gain and build momentum					
Ability to effectively manage change					
Ability to stick to the vision					
Effectively reconcile issues					
Communicating success/shortcoming and establishing corrective action					
Senior management leadership					
Please list others					

49. Did you use a consultant during this stage? ❒ YES ❒ NO

50. What were the 3 successes* during this stage?
    1.
    2.
    3.

51. What organizational, personal, or other attributes led to success?
    1.
    2.
    3.

52. What were the 3 shortcomings* during this stage?
    1.
    2.
    3.

53. What organizational, personal, or other attributes led to these shortcomings?
    1.
    2.
    3.

54. What would or should the company do next time?

55. What would or should the company avoid next time?

56. What advice would the company offer to others regarding implementation?

* Shortcoming is defined as not meeting the established performance objective(s).
* Success is defined as achieving or beating the established performance objective(s).

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