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# Process Reengineering: An Effective Way to Achieve Organizational Goals

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## ABSTRACT

This article is initiated and conducted to highlight the importance of Process Reengineering as an effective way to achieve organizational goals. In this article the rationale behind adopting process reengineering by business organizations has been described. At the same time, in this paper, principles of process Reengineering has been highlighted. Moreover, two case study of process reengineering for the companies Sloan Valve and Ford is discussed in different perspectives. This research is very crucial as financial industry needs to achieve its goals by optimizing the utilization of its available resources and minimizing the wastage. This paper will clarify that, process reengineering is the best technique for business organizations to achieve goals by resource optimization. Finally, this paper concludes with suggestions for future research relating to Business Process Reengineering.

**Keywords:** Process Reengineering, Organizational goals, Organizational Processes, Resource Optimization.

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## 1. Introduction

Every organization establishes with some set of goals and this goal differs from organization to organization. There are several ways to achieve the goals. But the most effective strategy is that which helps and organization to achieve its goals by optimizing the utilization of its available resources and minimizing the wastage. Especially the business organizations now need to reengineer its' process with help of IT to be competitive. At present, the key to success is innovation in products and services and ideas related to process. A lot of organization has the resources for idea generation but the exact process of developing these ideas can be missing and the business might not grab the desired idea. However, there are many organizations who have adopted process reengineering for improvement of their business processes and the number is increasing day by day. For example, Ford Motors, GTE, Sloan Valve etc. has adopted process reengineering to reshuffle their process of operation. This reengineering effort made them more successful by cutting down their unnecessary expenses and making the more effective against growing competition. However, day by day the business organizations are adopting process reengineering for development of their process of the operations. In this report, process reengineering is briefly discussed with the reasons and principles. Moreover, two case study of process reengineering for the companies Sloan Valve and Ford is discussed in different perspectives.

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## 2. Definition of Process Reengineering

Reengineering was introduced first time by Hammer and Champy who defined reengineering as "the fundamental rethinking and radical new design of processes to achieve amazing improvements in critical contemporary measures, such as price, quality, service and speed".(Omidi et al. 2016).

As such process reengineering is the radical redesign of business processes – strategies, value addition processes, systems, policies and organizational structure to achieve developments important aspects of organization like quality, cost, flexibility, speed and accuracy. Process reengineering follows process perspective in organizational transformation. Process reengineering has become an effective managerial tool to deal with different changes like- technological, strategical, marketing, human resources, and others by analyzing and redesigning both internal and external workflows and processes. The successful implementation of this process necessitates fundamental change in such a way that it is ensured that this change is appropriately conceptualized, that the company's workforce has been justified by the Board of Directors, and that the organization's implementation culture is established (Omidi et al. 2016).

In business process reengineering, the management starts with a blank piece of paper to sketch their existing process and rethink to make the process better and efficient so that they can deliver more value to the customer. Two specific areas are mainly focused in process reengineering – reducing organizational layers and eliminating redundancies in system. As such, firstly process reengineering helps to redesign functional organization into cross functional groups and secondly, it utilizes technology for improvement of information dissemination and decision making.

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### 3. Reason of process reengineering by business organizations

Process reengineering in an organization requires to face a lot of challenges and it is a time-consuming task too. A lot of time and resources need to be involved in it and when it is set up, a continuous improvement should be followed after that. So, it is rational to ask why management of an organization goes through this troublesome process of process reengineering. Well, every action should have a meaningful explanation to be successful. First of all, process reengineering is initiated first gauging the existing mission, vision whether it fits to the organization's overall goal or objective. Then after justification of that, the existing organization process is assessed and to find out the reasons of not achieving the desired goal. For example, the organization looks for the delay in product development, deploying in market, wastage in wrong product development, information gap and the collaboration gaps etc. By assessing all these existing organization processes, the company can understand where the adjustments can be made and reengineering can be constructed so that the flaws can be minimized and resource utilization can be optimized. So, clarity of the existing business process and improvement areas are ensured at the first step of process reengineering. So, there remains no information gap for the CIO/CPO who will be leading the process reengineering. Moreover, the other managers related to the reengineering also get clear idea of existing business process and where they need to work as well.

Process reengineering fosters collaboration and reduces the functional division. Moreover, it cuts off superfluous processes or not necessary steps in process that slows things down. Compared to functional perspective, process reengineering helps reduce redundancies in knowledge management by individual departments, improves collaborations, reduces the functional divisions, and increases cross functional communication. So, by diminishing redundancy in process and tweaking the required processes, the task is accomplished faster, greatly and less costly increases overall efficiency.

Process reengineering helps to establish better accountability and specification of each person or department's responsibility. So, the clear end to end process justifies the percentage of target task completion, whenever there need some adjustments, the accountability goes directly to the dedicated specific person. It also becomes a motivation for an employer if they have specified accountability.

Process reengineering reduces the time lag between the idea generation and deployment to the market. It helps to identify the right ideas through IT involvement and improved communication among the people of the organization and develops the ideas through specific designated team and organization can develop a prospective prototype without wasting in other futile ideas.

As process reengineering enables organization's leaders and employees to put more energy towards building relationship with customer through streamlined, digitized processes, greater efficiency is achieved by the organization in value creation and customer satisfaction. Moreover, cross functional teams make information flow seamless so business can become more resilient to market changes and innovation becomes culture of an organization.

For the above discussed advantages that can be achieved after process reengineering, the organization go through this troublesome but worthy development, especially in business organization.

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### 4. Principles of Process Reengineering

Reengineering is a rigorous process, and it cannot be done haphazardly. But in these years, after all these companies who adopted process reengineering has established several principles, keeping in front the other businesses can jump start the process reengineering in their organization as well.

#### *4.1 Organize around outcomes, not tasks*

Process reengineering overcomes the limitations of specializing one person in only one task and lack of collaboration between tasks. The principle of organize around outcomes, not tasks means that organization should have one person perform all the steps in a process. Instead of focusing on a single task a person should focus on the outcome of a process. So, the whole picture remains in his vision. Sequential or functional way of taking makes delay in ultimate outcome and instigates confusion. For example, an electronic company might have several functions or step wise approaches for selling to installment process. For accomplishing this task there were five different groups. As such, the delay, confusion, departmental specialization, information discrepancies, errors and misunderstandings occurred. But after they reengineered, it diminished the stepwise assembly line approach by compressing responsibility for several steps and assigned one person for this process supervision. As such, the accountability is ensured with the elimination of other different problems (Hammer, 1990).

#### *4.2 Have those who use the output of the process perform the process*

The conventional way of functionality in an organization generally requires specialization. Each department is specialized for their function. And the other departments use to be customer of other department as the service that cannot be performed by other departments. But now, with the use of expert systems and databases, departments can accomplish their own task without sacrificing the benefits of specialized services (Hammer, 1990).

#### *4.3 Subsume information processing work into the real work that produces the information*

In the old systems of business, the information was generated in one place, passed through several places in organization and processed in another place. So, the time was consumed much more than needed and the operation was delayed. This rule suggests that the department where information is generated, should be processed there as well. As such, the system can be improved with IT through reducing bureaucracies and processing time lags.

#### ***4.4 Treat geographically dispersed resources as though they were centralized***

There always been a conflict between centralization and decentralization. However, decentralization is providing better service to those who use it, but this also brings some issues like- redundancy, bureaucracy, and diseconomies of scale. However, now with the help of databases, telecommunications networks, and standardized processing systems to get the benefits of scale and coordination while maintaining the benefits of flexibility and service (Hammer, 1990). For example, when HP had every manufacturing unit's purchase department, they used to face redundancies, cost of transaction and time and losing benefits of economies of scale. So, with its technology, HP established and maintained corporate unit to maintain and manage divisional purchasing institutions. With the help of shared database of vendors, they could use their bargaining power based on their purchase history as one entity. Moreover, they could achieve efficiency in operation as well with 50% less lead times, 150% improvement in on time deliveries, 75% less failure rates and less cost of goods sold (COGS).

#### ***4.5 Link parallel activities instead of integrating their results***

In a company, there should be several different departments who works different works and at last they must integrate their functions together to make a final decision or product. For example, a car manufacturer must complete several different parts that is to be done by different departments and at the end they need to be integrated to make a final product. Another exclusive example can be Bank's different loan sections. A bank might have several different loan departments like- SMEs, Corporates, Exports, Imports etc. Through the functional processing, a customer could easily get different kind of loans without letting known by the other departments. As such, without knowing the real credit exposure of the customer, a bank could sanction more loan to the customer. As such, parallel processing is important for becoming effective and non-redundant. However, now its quite impossible for the banks to make such mistake because of the information system and technology. Most of the Banks in the world has transformed themselves with help of technology and made the information system efficient enough that any employee of the bank and any branch of a bank can access to the customer database. With unique national ID, bank can easily find out any existing customer in the system. So, the banks can take informative decision with this parallel system of processing – when customer relationship manager provides the information of the customer as a potential client, the bank opens customer account and generates unique ID, which gets accessible to every employee who are related to this kind of function and in seconds, with the ID details of the customer, asset base, existing loans and deposits, previous transactions, CIB reports etc. easily can be found. Like this, with the tools of communication networks, shared databases and teleconferencing, the functional groups can work parallelly and link their activities.

#### ***4.6 Put the decision point where the work is performed***

In conventional systems of organization, there are two type of workers – one who works, and another is who monitors the other's works. As such, there is more layer than under the process perspective of an organizational reengineering. However, this new principle suggests that people who do the work should make the decisions and that the process itself can have built-in controls (Hammer, 1990). Process perspective is effective in reducing layers of the organization. Therefore, pyramidal management layers will be reducing, and organization gets flatter shape. In this endeavor, IT can acquire and analyze information, and expert systems can supply knowledge and can make people enable to make their own decision (Hammer, 1990). As such, time consumption and bureaucracy are reduced due to the employee's self-dependency and self-controlling powers after the process reengineering.

#### ***4.7 Capture information once and at the source***

In past, data accessibility was very low in any organization. Right now, the accessibility is highly improved through maintenance of central database and accessing technology through devices across the organization. Moreover, this accessibility is disbursed to all over the world, where the business resides with the help of internet. So, this principle simply describes that process reengineering must facilitate saving data in a centrally maintained database from where anybody can access the data when required with the authority. Bar coding, relational databases and electronic data interchange (EDI) made it easy to collect, store and transmit information (Hammer, 1990). The former example of bank's central database and accessibility by the employees also can be applicable under this principle.

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### **5. Analysis of case of Sloan Valve's new product development (NPD) process**

Sloan Valve is a family-based business and a mid-sized manufacturing company of plumbing products, established in 1906. This company has several business divisions and design sites in various locations around the world. Different product of the company is – shower heads, flushometers, faucets, and sinks etc. The company has pioneered the water-efficient technology-based products and it supplies a lot of different industries. As in this competitive business environment Sloan has focused on new product development (NPD) as competitive advantage. However, the old NPD process faced the following challenges:

- Over 16 functional units involved: 16 different functional units used to make different decisions and do different functions. It made the system more complex; coordination was haphazard, it took around 18-24 months to launch a product to market.
- Immature process for initiating and screening new product ideas: The process of generating and screening the new product ideas was ad hoc, so half of the ideas eventually being dropped. (Ranganathan et al. 2011). This also resulted into poor idea acquisition, huge prototyping cost and wastage of resources.

- Lack of process ownership: In Sloan Valve's old system there was no specific person or department responsible for NPD process; accountability was a challenge for the company.

In early 2000, a new CIO is hired, who identified the flaw in the system, which was lying surrounding the established ERP system. So, CIO started to fix the business process and set about repairing them through process reengineering. However, integration of multiple departments becoming challenge so, the CIO got the additional duty as CPO (Chief Processing Officer). After that, CIO involved senior managers, IT business analysts, and IT program managers into this process through formal business process reengineering training course, led by Michael Hammer. This also developed a process-oriented mindset in the organization. Sloan valve reengineered its process through implementing two-level governance structure – strategic level structure and process level structure. Strategic level structure took care of the process redesign efforts across the whole company and process level structure focused on individual processes. The company relied on the process visualization tool to achieve the shift from silo-based thinking to end-to-end process thinking. The iGrafx software was utilized for modelling processes in real time and divide into sub process levels and for central management of diagram files. Moreover, “process decomposition” technique helped the team to decompose the NPD process into sub-processes to visually represent the as-is state and the to be state of the process (Ranganathan et al. 2011). They set up several KPIs to gauge the improvement of the process like – Time to Market, Innovation Rate, Total New Products and Portfolio Metrics. Also, instead of tweaking the old system with new established ERP system, the company upgraded ERP system concurrently with the process redesign. So, after all these reengineering the new NPD system was overhauled into a six end-to-end sub-process: Ideation, Business Case Development, Project Portfolio Management, Product Development, Product And Process Validation and Launch. Moreover, in implementation of reengineered NPD process, the company adopted two different process management mechanisms – The stage-gate methodology to assess the outputs from the six processes and the funnel approach which split the NPD process into front end and back-end activities so that all ideas passed through and were filtered. These approaches ensured NPD process coordination and best idea identification for prototyping, development, validation, and product launch. In addition to that, this process is subject to continuous upgradation and improvement. The technology used in the process reengineering is –

- Ideation Portal: It is an intranet platform that was deployed to manage new product ideas until they are commercially launched. This portal helped to track new product ideas progressing through the NPD sub-processes. It enables different business units to collaborate, discuss and exchange ideas, knowledge, and information.
- PLM Module: This module was used to support the sub-processes of NPD. At strategic level PLM is used as executive information system and at process level, PLM enables process owners to keep track of NPD target and efficiencies. It also helped cross-functional teams to collaborate with each other and it improved overall NPD system.

Like this way, Sloan Valve reengineered its NPD process and the result was noteworthy as the time to market reduced to less than 12 months, they could make a well-established process ownership: accountability increased, they provided more emphasis to the idea generation stage, less prototyping, so wastage of time, resources was minimized and everyone in the company could share their ideas about product innovation.

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## 6. Analysis of case of Ford's Accounts Payable

In the early 1980's the American automobile industry was facing downtrend, and, in that time, Ford's top management decided to lay off its employees in accounts payable department, where more than 500 people was working. Initially, the management thought that they could rationalize the process and install new computer system to reduce 20% employees. But after comparing with Mazda, they found that the existing number of employees is more than five times higher than needed. So, they increased their goal of cost cutting through lay off – many hundred fewer clerks will be needed for accounts payable department.

First, the management gauged the existing system of the department. They found that, employees spend most of the time on mismatches or disagreement among purchase order, receiving document and invoice. The account department of Ford had match 14 data items between the receipt record, purchase order and invoice (Hammer, 1990).

Ford adopted new process – “invoice-less processing”. First, purchasing department initializes an order and inputs it into online database. When the desired order arrives, the receiving clerk checks the database. When he finds matches, he accepts and enters transaction into computer system.

The new approach requires the department to match only three items – part number, unit of measure, and supplier code between the purchase order and receipt record (Hammer, 1990). Moreover, the matching is performed automatically as the computer matches records, generates check and the department sends it to vendor.

With adaptation of this new process, Ford achieved 75% reduction of the employees. Moreover, the material control was simpler and financial information became more accurate for computerized system. Ford not tweaked old system to the new process, but it obliterated it and reformed into new process to task completion.

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## 7. Comparative Analysis of case of Ford's Accounts Payable and Sloan Valve's NPD process reengineering

Though both companies went through rigorous transformation of the target process for increasing efficiency and effectiveness, they are different for their objective goal for reengineering. Sloan Valve tries reengineer its process of New Product Development for identification of the most innovative product idea to be generated and the reduction of time lag between idea generation and market launch. Using technological support, they could make it effectively accomplished. On the other hand, Ford targeted to reduce cost of human resources of Accounts Department. By utilizing technology, the company

introduced “invoice-less processing” method of accounts payable. However, the process reengineering enabled them to lay off 75% of redundant workers of the companies with improvement in control and accuracy.

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## 8. Application of principles of process reengineering in both cases of Sloan Valve and Ford

### Principle-1: Organize around outcomes, not tasks

Both companies, Sloan Valve and Ford has focused and organized around the ultimate process for achieving target, not the functions individually.

### Principle-2: Have those who use the output of the process perform the process

In Sloan Valve, CIO incorporated the managers into reengineering process through training them about BPR. Ford reduced the layer of organization and given the authority of processing only to three departments – Purchase department, receiving department, account department.

### Principle-3: Subsume information processing work into real work produces information.

Sloan Valve accumulated the functional divisions into accumulative six step processes and ensured the information generation and utilization remain in the same process, so the processing of information takes less time. Same is done for Ford. Ford's purchase order's receiving dock's Clark inputs the information in the system of receipt and matches with the existing entry and check is automatically generates after the approval of the receiving clerk. If it does not match with system, the product is returned.

### Principle-4: Treat geographically dispersed resources as though they were centralized

Sloan Valve's Ideation portal made all over the world's employees input the idea, share information and facilitated collaboration among different teams present in different part of the world. Though Ford's purchase department, receiving department and accounts department situated in different places their works were integrated in a centralized database and processing system.

### Principle-5: Link parallel activities instead of integrating their results

Both Sloan Valve and Ford reduced functional layers and avoided integration of end results after each functional department's works. Rather, the reengineered their old system in process end to end system.

### Principle-6: Put the decision point where the work is performed

In Ford, the decision is made at the processing point. For example, when receipt of document is matched the decision for payment is made and check is generated automatically which is then handled by accounts. On the other Sloan's six step process' decision is made in each layer and after passing these layers the product is ready to launch.

### Principle-7: Capture information once and at the source

Sloan Valve and Ford both facilitated the information generation, recording and processing at the same point, which reduced bureaucracy and wastage of time, money and resources.

Finally, it can be said that, Sloan Valve and Ford incorporation both did process reengineering for improvement of its existing process and it got the results far more than expected following the above-mentioned principles of process reengineering.

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## 9. Conclusion

Process Reengineering is a rigorous process, and it takes a lot of investments in time, money, and human resources. However, managers go through this process with aim to make organization to function in efficient way to maximize its utilization of resources and achieve its goal. The process reengineering starts with sketching out the existing business model, goal, mission, vision and compatibility of these with the existing organizational system, resources and culture. After that, the company goes through planning of the reengineering process and involving the user of the process, the reengineering is performed. Sloan Valve and Ford has gone through reengineering process. Sloan wished to improve its NPD process so it can better catch the innovative idea and the time lag between idea generation and launching product into market becomes less. On the other hand, Ford wished to reduce its number of employees in accounts section who processed accounts payable and most of the times the people were involved with the mismatches. However, with the support of technology and employee support, both companies reengineered successfully and achieved its target. As such, these companies not only become successful for themselves but also established crucial lessons for other companies who will consider process reengineering for their development. As a result, this article suggests that extensive studies in process reengineering be pursued to ensure obtaining organizational goals by optimizing the utilization of available resources.

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