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Reverse Engineering of Business Processes in Brake Manufacturing Unit: A Mutual Attitude.

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Abstract: *Reverse engineering is a stratagem- driven organizational initiative to fundamentally reexamine and redesign business process with the objectives of achieving competitive breakthrough in quality, responsiveness, cost, satisfaction and other critical process performance measures. It's about rejecting conventional wisdom and received assumptions of the past. In this research paper we offer an appraisal of BPR vision focusing upon the use of informational techniques to facilitate a shift way from linear sequential work organization towards parallel work and multidisciplinary team work.*

Keywords*: Introduction, Comparison, Methodology, Frame of Work, Conclusions, References.*

I. Introduction

Organizational theorists propose that the organization of the future will be networked across functions and designed around business processes rather than functional hierarchies. Business Process Reengineering (BPR) is now being offered as a paradigm of organizational change necessary in order to achieve the required flexibility and competitiveness of the networked organization. It has been defined as "the restructuring of organizational process through the innovative use of information systems and techniques. BPR requires changing the basic assumptions and principles of management, re-examining the nature of processes and creating changes of magnitude through innovation. The term BPR was first defined by Michael Hammer in his seminal article 'Re-engineering work: don't automate, obliterate,' which appeared in 1990 in Harvard Business Review (Hammer-1990).

What is Reengineering?

- ***Reengineering****g* is 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.
- ***Process*** is a structured, measured set of activities designed to produce a specified output for a particular customer or market. It implies a strong emphasis on how work is done within an organization. "(Davenport 1993).

Components of BPR: - The three components of re-engineering are as follows:

1. **Reintegrating the Tasks**: Combine smaller process sub-tasks and sub-activities into larger, integrated units and packages. The management should reduce the number of parts, components, segments and constituents in products and processes as well as reduce the number of parts in products and processes.

2. Reintegrating the Labour: Allow the workers to perform and co-ordinate larger rather than smaller portions of the process. The management should encourage multi functionality, job rotation, de-specialization and integrated process design.

3. Reintegrating the Knowledge: Knowledge is the ability to coordinate one's actions purposefully one is specialized, atomized and reduce to a machine appendage one can not coordinate action, but only perform single and simple and commands. There need for an integrated rather than specialized education.

How can BPR be applied to an organization?

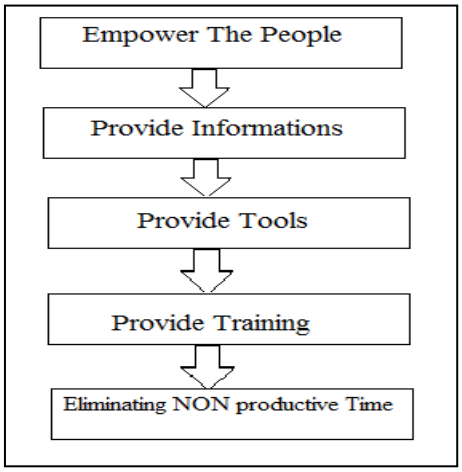
a. The *Initiation stage*: Project teams are assigned, performance goals, project planning and employee notification are set.

b. *The Diagnosis stage:* Documentation of processes and sub-processes takes place in terms of process attributes (activities, resources, communication, roles, IT and costs).

c. *The Redesign stage:* New process design is developed by devising process design alternatives and through brainstorming and creativity techniques.

d. *The Reconstruction stage*: Management technique changes occur to ensure smooth migration to the new process responsibilities and human resource roles.

e. The Evaluation stage: The new process is monitored to determine if goals are met and examine total quality programs.



How to reengineer: - In resuming, the whole process of BPR in order to achieve the expected results is based on key steps-principles which include redesign, retool, and re orchestrate. Each step-principle embodies the actions and resources as presented in the table below.

REDESIGN	**RETOOL**	**REORCHESTRATE**
➢ Simplify	Network	Synchronize
➢ Standardize	Intranets	Processes
➢ Empowering	Extranets	IT
➢ Groupware	Workflows	Human resources

II Comparison in the World of Work:-

Conventional Approach	**BPR**
Functional departments	Process Teams
Division of labor	Empowered employees
Controlled people	Multidimensional work
Training of employees	Education of employees
Compensation for skill and time spent	Compensation for results
Advancement based on ability	Advancement based on performance
Managers supervise and control	Managers coach and advice
Protective organizational culture	Productive organizational structure
Hierarchical organizational structure	Horizontal (flat) structure
Executives as scorekeepers	Executives as leaders
Separation of duties and functions	Cross-functional teams
Mass production	Mass customization

III. BPR Methodologies

Cobra Methodology

Identifying the Opportunity

⇩

Analysis of an Existing Process

⇩

Process Re-design

⇩

Implementation of the Change

⇩

Performance Monitoring

Talwar Methodology

Programme Initiation

⇩

Design and Implementation

Rapid BPR Methodology implemented in RBI:-

Stage 1: Preparation: - Appropriately begins with the development of an executive consensus on break though business goals and objectives that signify the raison of this Re-engineering project. This stage also clearly establishes the essential linkage between the break through business goals and the Re-engineering process performance parameters regarding schedule, risk and organizational change. This stage also brings together the Re-engineering team and brings from the initial change management plan.

Stage 2: Identification: Develops a customer-oriented model of business, identifies strategic value-added processes and maps organizations, resources and volumes to specific processes and priorities and recommends specific processes as the highest impact Re-engineering targets.

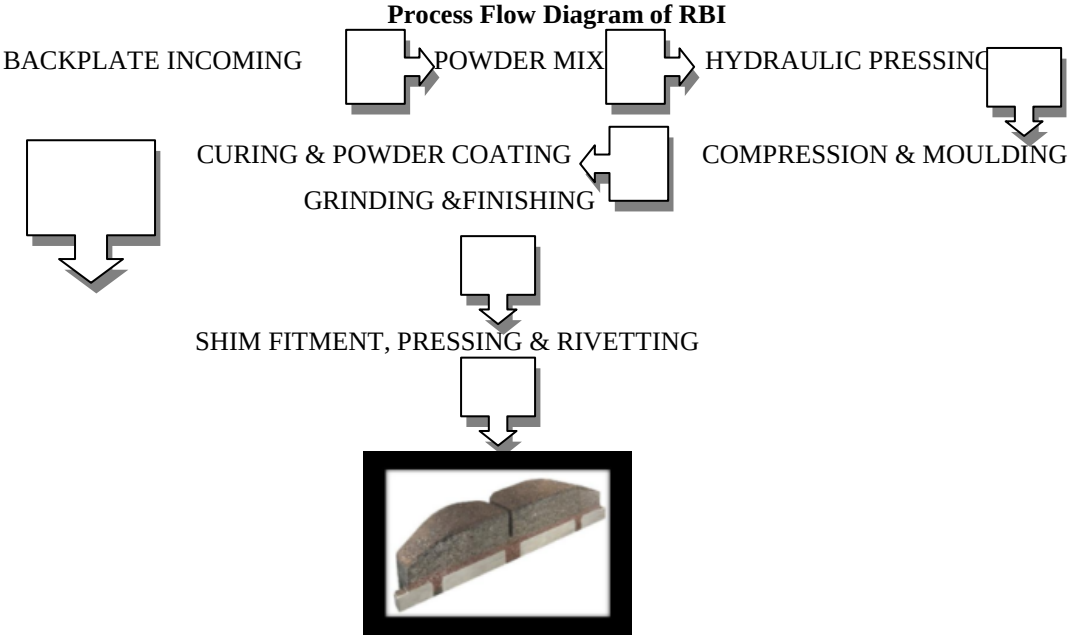
Stage 3: Vision: Looks for break through opportunities in the processes, analysis and structures them as "vision" of radical change.

Stage 4: Solution: It's actually divided into two nearly parallel sub-stages, one to develop the technical design to implement the visions and the "social" design which organizes and structures the human resources that will staff the Re-engineering process.

Stage 5: Transformations: Realizes the process vision, launching, pilot and full production versions to the new processes. Thus, this model provides more or less a linear process of undertaking re-engineering exercise.

Company Profile: Roulunds Braking (India) Pvt. Ltd. is leading manufacturer of Disc Brakes Pads in India, is known for Global quality Asbestos free passenger vehicles Disc brake pads. Started its production recently in 1998 under name Hilton Roulunds (India) later changed to Roulunds Braking (India) and have state of the art manufacturing facility at Sonepat in state of Haryana. The company is continuously supplying its friction material to highly competitive European Market / USA Market or we can say that company is 100% export oriented unit. The company products are well accepted in the global market because of its quality, competitiveness and delivery commitment. The company is a wholly owned subsidiary of MAT (Midwest-Air Technologies), based at USA, MAT is Investment Company. The company total manpower is 1200 and turnover is 220 Billion P.A.

Process Flow Diagram of RBI



IV. Frame of work:

S.N.	Complaint	Process	Counter Measure	Improvement
1	SPOTS	PRESSING	FOREIGN MATERIAL ENTRAPPING; UNDER LAYER CREATION	CLEANING OF PUNCHES REGULARLY
2	POROSITY	PRESSING	LESS WEIGHT OF POWDER MIX; IMPROPER TEMP.	PROPER SETTING OF BALANCE; ADEQUATE KNOWLEDGE OF MACHINE PERAMETERS TO OPERATORS
3	CRACKS	PRESSING	GROOVENOT CLEAR; IMPROPER HANDLING	ENSURE PROPER CLEANING OF GROOVE BEFORE OPERATION
4	COUNTER THICKNESS	POWDER MIXING	IMPROPER BALANCE OF POWDER, OPERATOR NEGLIGENCE	ENSURE PROPER WORKING OF PHYSICAL BALANCE, EMPLOY SINGLE MAN FOR BALANCING ONLY
5	UNCLEAR GAP BETEEN LAYER	POWDER MIXING	IMPROPER MIXING OF POWDER	ENSURE PROPER PROPORTIONATE OF POWDER
6	GREEN PADS/ RUSTED PADS	CURING	PRESENCE OF POISTURE AT PLATE SURFACE; IMPROPER CURING	ENSURE MOISTURE FREE PLATE BEFORE CURING; CHECKING OF PROCESS PERAMETERS
7	LOW THICKNESS	GRINDING	IMPROPER RECIPY SELECTION; LACK OF KNOWLEDGE ABOUT PROCES PERAMETERS	PROVIDE TRAINING TO OPERATORS ABOUT RECIPY AND PERAMETERS SELECTION
8	SETUP FAILURE	GRINDING	OPERATOR NEGLIGANCE; LESS SKILLED OPERATOR	PROVIDE ALL NECESSARY INSTRUCTIONS TO OPERATORS BEFORE OPERATION
9	GAP CREATION BETWEEN PLATE AND SHIM	SHIM FITMENT	IMPROPER CLEANING OF PADS; POOR QUALITY MATERIAL USED	ENSURE PROPER CLEANING OF PADS AFTER EACH STROKE AND USE GOOD QUALITY OF MATERIAL
10	BACK PLATE FAILURE	ASSEMBLY	O/S; U/S OF TOOL; IMPROPER TOOL SELECTION	ENSURE PHYSICALLY CHECKING OF TOOL AFTER EACH STROKE

V. Results & Conclusion:

A passionate customer focus, superior process design and a strong motivated leadership are vital ingredient to the procedure for the success of any business organization. BPR is the way that every organization should adopt to attain their fundamentals for success. Neither it provide a sensation cure on a tray nor a painless quick fix, rather it promotes arduous hard work and activate the people involved to not only the alteration what they do but targets at varying their basic way of thinking itself. In this paper I have attempted in evolving a structured approach to reengineering.

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