

## Waste reduction by the assessment of reverse engineering attitude in gear production unit

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### Abstract-

In the new world that is certainly that is quick changing with fast advances made in science and innovation and contracting fringes, the academicians have to the dispose of the old hypotheses of administration and revise the control everywhere once more. Benefit augmentation and aggregate quality administration have been supplant with new hypotheses including business process change, focused joint effort and building benefit streams on long haul fundamental in view of brand and business extension. Business process reengineering and upgrades change the way that the association take a gander at their man control, in this manner associations have started to prepare, prep and engage their representatives alongside the association uniting and wedding their individual objectives with the association objectives. Business process reengineering is otherwise called business process update, business change or business process change administration. By the utilization of bpr to lessen the built of returned materials in the assembling unit. BPR is not quite the same as different ways to deal with association advancement, particularly the constant change or tqm development by prudence of its go for basic and radical change instead of iterative change. Keeping in mind the end goal to significantly enhance client benefit, cut operational expenses, and end up world class contenders BPR has been prescribed.

**Keywords:** Association advancement; Business process reengineering; Business process enhancements; Quality administration

### Introduction

Business Process reengineering (BPR) includes the examination and upgrade of business process and work processes in your association. A business procedure is an arrangement of related work exercises that are performed by representatives to accomplish the business objectives.

Essentially, a business procedure is the way we play out our work and business process reengineering is the way toward changing the way we do our work so we improve to achieve the objectives of our business.

The thought behind business process reengineering is to make your organization more adaptable, responsive productive and successful for all partners, including client, workers and proprietors.

With the end goal for BPR to work, your business must will to roll out the accompanying improvements

- \* Change from an administration center to a client center. The boss is not the boss the customer is the boss.

- \* Empower your labourers that are engaged with each procedure to have basic leadership and possession simultaneously.

- \* Change your accentuation from overseeing exercises to concentrating on comes about.

- \* Make tracks in an opposite direction from scorekeeping and spotlight on driving and showing so workers can quantify their own particular outcomes.

- \* Change the organization's introduction from a useful introduction to a procedure or a cross utilitarian introduction. This considers an expansion in hierarchical learning among its individuals and a more prominent level of adaptability in achieving tasks.

- \* Move from serial operations to concurrent operations. In other words multitasks rather than simply completing one thing at time.

- \* Get rid of overly complex and convoluted process in favour of simple, streamlined process. Use the kiss principle keeps it simple stupid.

- \* Quit attempting to assemble a domain and ensure business as usual. Rather, imagine new frameworks and procedures that look toward what's to come.

\*Get rid of overly complex and convoluted process in favour of simple, streamlined process. Use the kiss principle keeps it simple stupid.

\*Stop trying to build an empire and protect the status quo. Instead, invent new systems and processes that look toward the future.

Methodology for Business process Reengineering

Stage1- Identification of goals and purposes

Stage-2 Analysis of current processes

Stage-3 Formulate a redesign plan

Stage-4 Implement the redesign plan

The essential thought behind business process reengineering is that an organization is an accumulation of procedures that advances over time gained performances in 1990s .But has emerged as business software and enterprise applications have provided more in depth analytics with which to evaluate business systems.

“The fundamental rethinking and radical redesign of business process to achieve dramatic improvements in critical contemporary modern measures of performance such as cost , quality service and speed .”

Business process re-designing (BPR) is a business administration technique, initially spearheaded in right on time 1990s, concentrating on the examination and plan of work processes and business process inside an association in a general sense reconsider how they do their function keeping in mind the end goal to significantly enhance client benefit, cut operational expenses, and end up world class competitors.BPR tries to help organizations profoundly rebuild their associations by concentrating on ground-up outline of their business processes..According to davenport (1990) a business process is an arrangement of legitimately related undertakings performed to accomplish a characterized business result , reengineering accentuated an all encompassing spotlight on business targets and how forms identified with them, empowering full scale entertainment of process as opposed to iterative streamlining of sub forms.

Business Process Reengineering (Steps)-

How BPR connected to an association -

- Who are clients?
- What esteems would we say we are putting forth them?

- Is the present procedure conveying expected qualities?
- Does the procedure should be reclassified or updated?
- Are the procedures in a state of harmony with our long haul mission and objectives?
- How might be we handle the current procedure?

Any Business Process can be described into three noteworthy components

- Inputs, (for example, client enquiries or client inputs)
- processing of the information (which generally experience a few phases and may fundamental advances that swing out to be time and cash expending)
- The result (the conveyance comes about not surprisingly by organization (industry)).

Kinds of firms

BPR could be executed to all organizations (banks, producing firms, retailers, BPO's and so forth) and open associations that fulfil the accompanying criteria

- Least number of representatives 20
- Management duty to develop its organization and finding better approach for working and break free from its conventional style of work.

Business Process Reengineering could be connected to organizations that defy issues

- High operational expenses
- Low quality offered to clients
- Poor execution/fair exhibitions from its workers.
- Inappropriate circulation of assets and occupations so as to accomplish greatest execution.

**Company profile –**

Punjab Bevel Gears Ltd started operation in 1979. PBGL manufacturers more than 2000 different type of gears. PBGL is the leading manufacturer, supplier and exporter of automotive and tractor parts.

PBGL competitiveness lies in the fact we are

- Cost competitive
- Quality Conscious
- Having track record of on time delivery

- Having capability to develop new products in a comparatively shorter period

PBGL plants at Sahibabad and Sitarganj are ISOTS 16949-2009 certified.

PBGL forging plants at Ludhiana is ISO9001:2008 certified.

PBGL differential gear plant is ISO9001:2008 certified

Best supplier award for new product development by TAFE in 2010

Best supplier award for consistent delivery performance through Pull system –KANBAN by TAFE in 2013

There are 4 manufacturing unit.



**Table 1: An Evaluation On Application Of Business Process Re-Engineering In Gear Assembling Unit**

S.NO.	ITEM	COMPLAINT	COUNTER MEASURE	IMPROVEMENT	PROCESS
1	Crown Wheel & Pinion	Flakes	These are basically internal reupture caused by the improper cooling	This can be remedied by following proper cooling process	Forging
2	Pinion Epicycle tafe	Scale	Improper Cleaning of the stack used for forging	By the proper cleaning of stacks	Forging
3	Steel Plate output flange	Fold	When the surface of metal fold against each other without fusing property	By the proper fusing process	Forging
4	High/Low speed Gear	Cracks	Due to Excessive cold working	By the follow proper cooling process	Forging
5	Gear Rack	Lug band	100% Inspection is going on forging state	Material handling should be reduces and robotics essential	Transportation
6	Intermediate Gear	Diameter size +, -	Depend upon the skill of operator of manual machine	Due to proper Training to operator	Grinding
7	Helical Gear	Poor surface finish or crack	More wheel dressing frequency	To do less wheel dressing frequency	Grinding
8	Coupling Propeller shaft	Distortion	Due to Improper loading pattern	To make available of proper loading pattern picture in H.T. Zone	Heat treatment
9	Hub ground P.T.O.	Decarburization	Due to less content of corbon	Proper knowledge of Increasing the corbon content should be given to intake	Heat treatment
10	Main shaft	Core hardness high	High Hardening temperature	May be corrected to some extent by hardening from low hardening temperature	Heat treatment
11	Double gear (36+46T)	Incorrect face width	Due to lack of technical skills	By provide proper technical skills	Gear Cutting
12	Drive Shaft	Chattering	Machine vibration also called chatter correspond to relative movement between work piece and catting tool	Increasing rigidity is one option use a shorter tool or tool holder that clamps the tool more rigidity	Gear Cutting
13	Counter shaft	Spots	Foreign Material entrapping under layer condition	Cleaning of machine tool and work piece regular	Gear cutting
14	Hydraulic pump idler	Key way upset	Setting not done properly	Align the job canter to center	Gear cutting
15	Constant Mesh gear	PCD, Run out	Cutter out, fixture out, canter out	Redialling and within 10 microns	Gear cutting

### Result and Discussion-

In now days the slow, cautious process of incremental improvements leaves many organization unprepared to compete.

In today's rapidly changing market place. Reengineering has helps organizations make noticeable change in pace and quality of their response to customer needs (I.e. breakthrough improvements). Reengineering has helped create more challenging and more redrawing jobs with broader responsibilities for employees (job redesign). It boosts competitiveness in the operations network through simpler, leaner and more productive processes. By the use of

reengineering an organisation can be transformed from a rule driven and job centred organization structure that focuses directly on the customer.

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