Productivity Methodologies, Tools, and Techniques

Business process reengineering

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Business process reengineering (BPR) was first introduced by Michael Hammer, a former professor at the Massachusetts Institute of Technology, in an article published in *Harvard Business Review* in 1990 (Reengineering Work: Don't Automate, Obliterate, July–August 1990, pp. 104–112). Hammer and James Champy defined BPR 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. Since then, many enterprises, from high-tech industries such as semiconductors to traditional ones such as footwear and apparel, and from assembly-line sectors to logistics operations have been applying BPR to improve their productivity and competitiveness due to more severe global competition and to combat economic decline over the past two decades.

The key to BPR is to look at the business processes from scratch and determine how an organization can best rebuild those processes to improve their performance. BPR differs from continuous improvement (CI) in that BPR redesigns future business processes from a "clean slate" perspective by getting rid of current work practices, but CI designs it based on the modification of current business processes. Consequently, BPR has a higher risk in implementation but holds the possibility of significant improvement. On the other hand, CI has a lower risk due to gradual and/or partial change but the expected improvement is limited.

BPR does not guarantee successful implementation. Successful BPR case studies have been widely reported, while failed ones have not. It is estimated that there is a 50% to 70% failure rate of BPR projects with either unsuccessful efforts or no significant benefit gained. As a result, BPR needs to be performed in a systematic, rational manner.

Table. Typical phases in a BPR project.

Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
Team alignment	Process diagnosis	Process redesign	Implementation	
Identify core process	Evaluate core process	Design process	Implementation	
Develop vision and process objective	Assign project manager	Evaluate current process	Apply information technology	Design and develop process
Vision	Kickoff	Diagnosis	Redesign	Implementation and evaluation
Preparation	Identification	Vision	Planning	Conversion
SWOT analysis	Critical success factors	Strategy	Process definition and design	Competitiveness design
Customer requirements	Analyze process	Benchmarking	Design process	Implementation and evaluation
Target/KPI setting	Project kickoff	Process diagnosis	Process redesign	Implementation and evaluation
BPR team formation	Project kickoff	Process design	Integration	Evaluation
Set goal	Brainstorming	Evaluate process	Design process	Implement

Successful BPR implementation requires strong support from the top management, since it emphasizes the fundamental rethinking and radical redesign of business processes. A dramatic change in business processes is impossible without the authorization from the top management, and this is the most challenging issue in BPR practice, accounting for a significant percentage of failed BPR projects.

It was reported that in tens of BPR projects in footwear and apparel factories in recent years the following improvements were typically observed within one year:

- Greater than 10% increase in units produced per man-hour;
- Greater than 5% increase in the on-time delivery rate;
- Greater than 50% decrease in lead time;
- Greater than 50% decrease in work-in-process level;
- Greater than 5% decrease in equipment down time; and
- Greater than 3% decrease in unit cost.

BPR is generally executed in phases. Several versions of typical BPR phases are shown in the following table.

Yesterday's competitive advantage becomes today's basic requirement of

survival. CI is insufficient in many cases, and BPR is therefore adopted to speed up the improvement in productivity and competitiveness in response to the dramatic, rapid changes in the business environment in recent years. Effective, efficient integration of BPR and CI is encouraged.

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