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Introduction

Business Process Reengineering (BPR) gained immense popularity in the 1990’s as the solution de rigueur for businesses trying to keep up with a rapidly changing environment. Pushed to the forefront of the business world by Michael Hammer (BPR’s most prominent proponent) and James Champy, BPR radically altered industry’s view of how to change an organization. BPR evangelists called for the complete dismantling of existing institutions; and like the Phoenix that sprang forth from the ashes, a new organization would arise - more efficient, more productive, and more profitable. However, the corporate world’s pedigree is replete with false starts and failed attempts using radical reform programs; and like its forefathers, the dogma of traditional BPR suffered a similar fate.

Conceptually BPR is a wonderful idea; but it fails to take into account that human beings are homeostatic and thus, innately resistant to major changes in their lives. Our Commercial IT Services group believes that to be effective, change must be introduced in manageable quantities. Just as one pill per day over a period of time normalizes a medical malady, change instituted in measured doses is easily tolerated. Moreover, we also believe that evolutionary changes, not revolutionary, deliver better and longer lasting improvements for an organization. To that end, we have adopted a hybrid approach drawn from both Business Process Improvement (BPI – sometimes referred to as TQM) and Business Process Reengineering (see Figure 1 – based on an original summarization by T.H. Davenport, Process Innovation, 1993, pg. 11). The People, Processes, and Productivity Improvement (p3i) methodology pulls from both BPI and BPR to produce a scalable framework to meet the needs of any size organization – from a single workgroup or department to an entire corporation.

<table>
<thead>
<tr>
<th>BPI</th>
<th>BPR</th>
<th>p3i</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of Change</td>
<td>Incremental</td>
<td>Radical</td>
</tr>
<tr>
<td>Starting Point</td>
<td>Existing Process</td>
<td>Clean Slate Approach</td>
</tr>
<tr>
<td>Frequency of Change</td>
<td>Once to Continuous</td>
<td>One Time</td>
</tr>
<tr>
<td>Implementation Time</td>
<td>Short</td>
<td>Long</td>
</tr>
<tr>
<td>Focus of Participation</td>
<td>Bottom Up</td>
<td>Top Down</td>
</tr>
<tr>
<td>Typical Scope</td>
<td>Functional</td>
<td>Cross Functional</td>
</tr>
<tr>
<td>Associated Risks</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Primary Enabler</td>
<td>Statistical Control</td>
<td>Information</td>
</tr>
<tr>
<td>Changes Required</td>
<td>Cultural</td>
<td>Technology</td>
</tr>
</tbody>
</table>

Figure 1
The P3i Advantage

**Scalable**
The p3i methodology differs from its counterparts in its level of scalability. From a rudimentary change in a single department to extensive improvements throughout an entire company, p3i is able to address and successfully instill multiple degrees of change across the entire breadth of an organization. As companies differ significantly in their organizational structure and cultural behavior, it is necessary for any process improvement methodology to be mindful of these differences. Other methodologies including classical BPR, start with a blank page in their efforts to redesign, ignoring not only the current hierarchy and culture but also those processes that work well and should be retained. Conversely, the p3i methodology takes a scalable approach to process improvement in that it builds upon the existing strengths and incrementally improves the weaknesses, iteratively making step-wise improvements to ensure a series of changes that fall within the tolerances of the user community. In so doing, we believe that users, as well as entire organizations, are able to accept the ever present discomfort of change, celebrate the smaller but more frequent wins, and avoid the high risk changes associated with traditional BPR efforts. This scalable approach also builds momentum for continued change by capitalizing on and showcasing these success stories.

**Holistic**
The p3i methodology also looks across the entire organization in its scope for identifying potential improvements (see Figure 2). The cornerstone of this holistic view is the corporate strategy. Before any changes can occur, it is necessary to work with the organization's senior leadership team to identify (and help define when necessary) the corporate strategy. This strategy becomes the foundation and the benchmark for process change. When properly defined and articulated, corporate strategy is the most effective tool against which to test the validity of both departmental and enterprise-wide process improvements. For this to happen, the strategy must first be generalized into four to five key phrases. These short phrases encapsulate the idea of the strategic goal without losing the substance of that goal. An example is to shorten a strategic goal of “improving return on investment for the shareholders” to “make money”. These short phrases then serve as a litmus test to validate the business processes in the organization. If a process does not support one or more of the strategic goals, the process’s value-added components are integrated into another process while the non-value added steps are discarded. Alternatively, the entire process is redesigned for efficiency and to ensure it supports a strategic goal.

As processes are identified and redesigned for improvement, it is also necessary to look at the existing IT infrastructure to see what technology will support the processes. Often inefficiencies are found when the technology is inadequate to support the business processes across an organization. In these cases, intricate, lengthy, and undocumented workarounds are developed to circumvent the deficiencies in the existing technology. When redesigning processes, it is necessary to determine what workflow steps are in place due to technical limitations and what technology must be changed or put in place to support the new processes. While it is neither optimal nor advocated, it may be necessary during the redesign phase to alter the processes in order to meet the limitations imposed by the technology. This should only occur if the purchase of new technology or the upgrade of the existing infrastructure is not possible. Since the primary enabler of the p3i methodology is IT, the use of technology should support the business processes and strategic goals. The workflows and business goals should not be predicated on the infrastructure.
Overview of The Methodology: The Salient CRGT Way

Salient CRGT’s p3i methodology comprises five different steps, each composed of multiple activities depending on the granularity of the process improvement effort undertaken (see Figure 3). The five steps are defined as follows:

Step 1 – Initiation: This includes the assignment of a process improvement project team, establishing performance goals, project planning, and notification of the impending project to the process managers and users to gain their “buy in”.

Figure 3
Step 2 – Diagnosis: This encompasses the documentation of existing processes and its sub processes including such items as process steps, resources, inputs, outputs, communications, roles, IT support, and costs. Salient CRGT utilizes a technique known as ICOM (Inputs, Controls, Outputs, and Mechanisms) to glean the “who”, “what”, and “how” of each process and sub process. Inputs are the items consumed during the process such as materials and information. Controls are the constraints governing the process including budgets, business rules, and regulatory requirements. Outputs are the outcomes of the process such as materials, products, information, and documents. Mechanisms are the resources utilized to produce the output including personnel, equipment, and computer systems. During this information gathering session customer value, root causes for problems, and non-value added activities are identified. To assist in identifying the processes to be reengineered, all candidates should be accurately placed in the proper quadrant on the Risk/Reward matrix shown in figure 4 below.

![Risk vs Reward Matrix](image)

The Risk/Reward Matrix is used to pictorially represent the candidate processes for change in the company. Those processes that fall in the low risk/high reward quadrant are the first to be analyzed for change as they offer the greatest amount of return and the least chance of failure. Those processes that fall in the high risk/low reward quadrant typically exceed an acceptable level of risk and, if undertaken are far too risky to be altered and have the chance of hurting the organization in the process.

Step 3 – Redesign: In this step the new process design alternatives are developed via one or more creativity techniques. New designs should meet strategic objectives, be technically feasible based on the current or proposed IT infrastructure, and meet human resource constraints. The idea is not to create the ideal process, but to create the best process bearable to those performing.

Step 4 – Implementation: The implementation step is predicated on good change management techniques to ensure a smooth migration from the existing process to the newly redesigned one. During this step any new IT infrastructure changes are put in place, and the stakeholders go through any training or transition activities.

Step 5 – Evaluation & Evolution: This final step of the p3i methodology is to monitor the new processes to determine if the goals are being met. Along with the Redesign step, this step is iterative when a process change is too radical to be handled in a single iteration.
Details of The p3i Methodology

The People, Processes, and Productivity Improvement Methodology provides a simple framework onto which customizable layers of detail can be built. The scalability of p3i allows both financial and time constraints to dictate the level of detail achieved in analyzing the existing processes and redesigning them to increase their efficacy. Irrespective of the detail needed however, the entire process improvement program requires the involvement and commitment of four different groups of individuals: senior management, process managers, users, and the Salient CRGT team. As the project progresses, specific group involvement waxes and wanes in terms of time commitments and the level of input required. Yet, because p3i is also holistic in nature, all groups should be briefed on a regular basis as to project status and each group’s input utilized, even if that group is not actively involved with the current activities.

The following outline illustrates the details of a typical process improvement project utilizing the five steps in the p3i methodology:

Initiation

Questions to Ask
▶ Who was assigned to the team and why?
▶ What can be told “now” about process improvement and when can the whole story be told?
▶ What groups or departments does the client feel need to be reengineered?
▶ What channels are to be used to communicate with employees? (provide information to the users and take questions).
▶ What is the time frame to complete the entire effort?
▶ What are the performance goals? (i.e. reduce time to complete a process from two weeks to two days).
▶ What are the Critical Success Factors (CSFs) in meeting the performance goals?
▶ What enabling technologies are in place?

Typical Activities
▶ Conduct a kick-off meeting with the entire project team.
▶ Develop an initial project plan.
▶ Meet with the stakeholders of the reengineering targets to discuss what you will be doing and why.
▶ Agree on a template for graphically capturing the existing processes.

Typical Deliverables from the Process Improvement Team
▶ First draft of the project plan with greatest emphasis on gathering data for current processing.
▶ Process flow templates (see Appendix A for sample process flows).
Groups Involved
▶ Senior management.
▶ Salient CRGT Commercial IT Services.

Possible techniques to be used (See Appendix B)
▶ Benchmarking.
▶ Brainstorming.
▶ Core process analysis.
▶ Cost/benefit/risk analysis.
▶ Critical success factors (CSFs).
▶ Process prioritization matrix.
▶ Team building.

Diagnosis

Questions to Ask
▶ Do the stakeholders understand why this effort is being undertaken, and what are their concerns?
▶ What are the relationships between the existing processes?
▶ Which processes are interdepartmental?
▶ Is this process (or sub process) tangential or integral to the firm’s strategic goals and objectives?
▶ Why is the process being done?
▶ How is the process currently completed?

Typical Activities
▶ Document the existing work-flows including: sub processes, inputs, outputs, communications between people or departments, supporting IT capabilities, associated costs, etc.
▶ Ensure any “rules of thumb” are documented.
▶ Identify targets for reengineering and present these for client approval.
▶ Communicate current activities to the employees.

Deliverables from the Process Improvement Team
▶ Existing process flows using the template.
▶ ICOMs.
▶ Recommendations for processes to undergo reengineering.
▶ Updated project plan.

Groups Involved
▶ Process Managers (heavy involvement).
▶ Users (heavy involvement).
▶ Salient CRGT Commercial IT Services.
Possible Techniques to be Used (See Appendix B)
▶ Activity based costing.
▶ Benchmarking.
▶ Data flow diagramming.
▶ Delphi technique.
▶ Fishbone analysis.
▶ Focus group.
▶ Process flow charting.
▶ IDEF0.
▶ IDEF3.
▶ Job analysis.
▶ Out of the box thinking.
▶ Pareto diagramming.
▶ Reframing.
▶ Role activity diagramming.
▶ Skills inventory analysis.
▶ Structured interviews.
▶ Surveys.
▶ Time motion studies.
▶ Value analysis.

Redesign

Questions to Ask
▶ How do other successful companies handle these processes?
▶ What technical resources (people, hardware, software) are required?
▶ How many people are involved with the processes?
▶ How many of those people add value to the processes?
▶ How many people should be involved in the processes?
▶ What tools are utilized to facilitate the processes?
▶ How many handoffs can be eliminated from the processes?
▶ Which existing systems need to be modified, upgraded, or replaced to support the new processes?
▶ What additional systems need to be added to support the new processes?
▶ What training needs to be put in place to support the new processes?

Typical Activities
▶ Have the stakeholders/employees assist in redesigning their jobs.
▶ Design and document the new process flows.
▶ Ensure the new process supports a goal established in the Initiate step.
▶ Analyze the IT architecture to validate it supports the process changes.
▶ Present the new processes to senior management for approval.
▶ Current activities are communicated to the employees.
▶ Develop a transition plan for the implementation.

Typical Deliverables from the Process Improvement Team
▶ New process flows using the template.
▶ IT architecture change recommendations.
▶ Transition plan and updated project plan (these may be combined).
Getting Involved
▶ Senior management.
▶ Process managers.

Possible Techniques to be Used (See Appendix B)
▶ Affinity diagramming.
▶ Brainstorming.
▶ Conversion techniques.
▶ Cost/benefit/risk analysis.
▶ Data flow diagramming.
▶ Delphi technique.

Typical Deliverables from the Process Improvement Team
▶ Updated project plan.

Questions to Ask
▶ What needs to be done to ensure the transition goes smoothly?
▶ Are training programs in place (if needed)?
▶ What mechanisms are in place to handle unanticipated problems?
▶ What can be done to generate continued enthusiasm for the new processes?
▶ What procedures are in place or need to be put in place to ensure the changes are implemented?
▶ Has someone been identified to manage the transition plan?

Typical Activities
▶ New IT support is implemented (if needed).
▶ Employees attend training programs (if needed).
▶ Test new processes to ensure they perform as designed.
▶ Refine the new processes if required.
▶ Complete details are communicated to the employees.

Typical Deliverables from the Process Improvement Team
▶ Updated project plan.

Getting Involved
▶ Senior management.
▶ Process managers.

Users.
Salient CRGT Commercial IT Services.
Possible Techniques to be Used (See Appendix B)
▶ Assumption surfacing.
▶ Behavioral modeling training.
▶ Conversion techniques.
▶ Exploratory training method.
▶ Instruction based training.
▶ Reframing.
▶ Skill inventory analysis.
▶ Team building techniques.

Evaluation & Evolution

Questions to Ask
▶ Do the new processes meet the original goals?
▶ If the new process is only a step-wise improvement, when should the next steps be implemented?

Typical Activities
▶ Modify any new processes that do not meet the original goals or do not perform as designed.
▶ Begin to implement other new processes not included in the original reengineering effort.

Typical Deliverables from the Process Improvement Team
▶ Updated process flows.

Groups Involved
▶ Senior management.
▶ Salient CRGT Commercial IT Services.

Possible Techniques to be Used (See Appendix B)
▶ Activity based costing.
▶ Auditing.
▶ Fishbone analysis.
▶ Focus groups.
▶ Pareto diagramming.
▶ Structured interviews.
▶ Surveys.
▶ Time motion studies.
Making p3i Work for You

Key Points to Remember for Success

✓ Senior management must be actively involved in all phases of the improvement effort. They should not delegate key decisions downward and must be recognized as the leaders of process improvement.

✓ Enterprise wide involvement is (at a minimum, on the communication level) infinitely better than a “skunk works” approach. There is no such thing as a “black box” process improvement project.

✓ Motivation and incentives are cornerstones to the success of any process improvement program. These should not be afterthoughts.

✓ Admitting or identifying a problem in a process without offering up a solution at that time is normal and perfectly acceptable.

✓ There is no such thing as the “ideal” process for most real world situations.

✓ Change initiatives should be linked to explicit goals. If it can’t be measured, it can’t be managed. If the change initiative doesn’t meet a strategic goal, redesign it so it does.

✓ Implement changes on a trial basis and have users and process managers provide feedback. If the new process does not integrate easily into the existing workflows, tweak it so that it does fit.
In Conclusion

The potential exists for any organization to achieve gains in productivity, customer service, and flexibility while reducing processing time, non-value added activities, and duplicative efforts. The p3i methodology is the key to unlocking that potential. While recognizing the need and opening the door to change is a critical first step, it is equally important to adopt an improvement plan that supports the strategic goals of an organization, can be supported adequately through technology, and is tolerable to the user community. Only then can lasting improvement be achieved. With its scalable and holistic approach, the p3i methodology is optimally suited to meet the process improvement needs of any organization.
# Appendix A

## Sample Process Flow Templates

### Process Flow Template

**Process Name:** Audit Policy

<table>
<thead>
<tr>
<th>No.</th>
<th>Start/Stop Process</th>
<th>Cycle Time</th>
<th>Process Time</th>
<th>Operation</th>
<th>Decision Point</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>N/A</td>
<td>N/A</td>
<td>Receive audit request</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>30 min</td>
<td>5 min</td>
<td>Enter audit info into tracking DB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>5 min</td>
<td>3 min</td>
<td>Print audit form</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>5 min</td>
<td>1 min</td>
<td>Send to Underwriter for approval</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>24 Hr</td>
<td>10 min</td>
<td>Get approval from UW with the audit company to use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>1 Hr</td>
<td>6 min</td>
<td>Copy the policy and attach it to the audit form</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>15 min</td>
<td>1 min</td>
<td>File a copy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>5 min</td>
<td>2 min</td>
<td>Mail policy copy and audit form to the audit company</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>N/A</td>
<td>N/A</td>
<td>Wait for audit results – approx. 2–3 months</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>N/A</td>
<td>N/A</td>
<td>Receive results from the audit company</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>3 Hr</td>
<td>5 min</td>
<td>Get policy file</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td>1 min</td>
<td>1 min</td>
<td>Attach audit results to the policy file</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td>1 Hr</td>
<td>2 min</td>
<td>Log the results into the tracking DB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td>48 Hr</td>
<td>5 min</td>
<td>Send results to underwriter for review and approval</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>N/A</td>
<td>N/A</td>
<td>Is there an endorsement?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td></td>
<td>8 Hr</td>
<td>2 min</td>
<td>YES – Enter the endorsement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td></td>
<td>N/A</td>
<td>N/A</td>
<td>NO – Do nothing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td></td>
<td>N/A</td>
<td>N/A</td>
<td>End of Process</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Cycle Time is the amount of time this process typically takes to complete given normal interruptions or delays present during a business day (i.e. phone calls, co worker stops by to ask questions, etc.). Process Time is the amount of “Productive” time it normally takes to complete the task. For example, in step 5 “Get approval from the underwriter with the audit company to use”, it typically takes ten minutes to have the underwriter approve the audit, decide which audit company to use, and annotate those decisions.

These process flow templates are only two of many different templates that can be used. While the example processes used in each are contrived, they do illustrate some of the data items that can be included in a template. Other data commonly used are actual costs associated with each step (Activity Based Costing), communication channels between the steps, the responsible party (either job title or actual name of the person) for each step, and whether this is a core or tangential process. An important item to remember in developing a template is that every company is different. A template developed and used successfully for company ABC may be completely inappropriate for company XYZ. The format and information included in the template should be made jointly between the Salient CRGT team and the client and be based on the objectives and goals of the effort. If one of the major goals is to reduce costs, Activity Based Costing should be included. If a goal is to reduce the amount of time to complete a process, both cycle time and process time should be included. Flexibility is the key to success.
Appendix B

An Overview of Process Improvement Techniques

**Activity Based Costing:** This technique determines how a process and its sub processes consume resources by identifying cost drivers to activities.

**Affinity Diagramming:** Sorts ideas generated from brainstorming into groups and diagrams relationships within and between groupings.

**Analytical Hierarchy Process:** A technique for organizing the goal for a decision into a hierarchy of sub goals and a systematic procedure for making trade-offs among these sub goals, which will provide the basis for determining the overall scores for various decision alternatives.

**Assumption Surfacing:** Aimed at strategic problem solving, the technique treats the problem as one of examining assumptions underlying a policy rather than formulating and testing specific policies. Typical questions raised include: What assumptions have been traditionally held and why? What is the effect of making other assumptions? Can a policy stand up to other assumptions; can it tolerate them?

**Auditing:** Investigates the reliability and integrity of a business process through sampling, trails, and other auditing methods.

**Behavioral Modeling Training Method:** This method seeks to combine the traditional lecture-based instruction method, which may be more appropriate for factual knowledge, and ETM (Exploratory Training Method) to cover procedural tasks.

**Benchmarking:** Measures the performance of a process and compares the results with those achieved by “best practice” in the company, in the industry, or in “world-class” firms.

**Brainstorming:** Provides an open forum for spontaneous generation of ideas from members of a group. Creative thinking is stimulated through a process of adding on the others’ concepts.

**Competitive Analysis:** Analyzes the capabilities of competitors and the company’s strengths and weaknesses, leading to a formulation of the company’s competitive strategies.

**Core Process Analysis:** A technique developed for identifying the few cross-functional business processes that determine the competitive success of the firm.

**Conversion Techniques:** Include “burning bridge”, parallel operation, and other methods for cutting the current system over to a new system.

**Cost/Benefit/Risk Analysis:** Assesses the expected cost and anticipated benefits of the redesigned process and analyzes risk factors that may prevent the realization of the benefits.

**Critical Success Factors:** A method developed to elicit from chief executives those factors that must be continuously monitored in order for the firm to succeed.
**Data Flow Diagramming:** Graphically depicts the flow of data among external entities, internal processing steps and data storage elements.

**Delphi Technique:** This technique seeks to eliminate the bandwagon effect of majority opinion in group meetings by issuing a sequence of questionnaires to a panel of experts to successively refine their opinions and finally reach a consensus.

**Fast Cycle Full Participation Change Methods:** Rather than relying on the traditional design team with limited membership, this method involves as many people as possible from the affected area in the design process through a combination of search conference and socio-technical systems design methods. Experience has shown that quality of the design as well as the ease of subsequent implementation significantly improves, resulting in much less time spent on the project.

**Fishbone Analysis:** A graphical tool using a diagram in the shape of a fishbone for analyzing cause-effect relationships in problem diagnosis. Also known as “Ishikawa” or root-cause diagrams.

**Focus Group:** Consists of customers of a businesses process and is formed to collect information on expected and actual process performance.

**Force Field Analysis:** A method for identifying forces that push up as well as push down process performance. A pictorial representation is used to facilitate the analysis.

**IDEF 0, 1, 2, 3, 4, 5, 6:** A systems analysis and design methodology established by U.S. Air Force as a result of its Integrated Computer and Manufacturing (ICAM) program.

- IDEF0 is an activity modeling module for capturing functional requirements (“identify what I need to do”).
- IDEF1 is the data modeling module using the entity relationship diagramming method.
- IDEF2 is the module that provides simulation of the process to depict its dynamic behavior and how information and resources in the organization are used.
- IDEF3 incorporates the time dimension to capture the behavior of objects in the enterprise through state transition diagrams.
- IDEF4 deals with object-oriented data modeling.
- IDEF5 provides a repository for large analysis and design information.
- IDEF6 captures “meta” designs, i.e., the knowledge and thinking that went into framing the other IDEF modules.

**Instruction Based Training:** This is the traditional lecture oriented training method where an instructor makes organized and detailed presentations to explain materials. This method may be appropriate for factual knowledge.

**Job Analysis:** A systematic process for collecting task data, behavioral data, and ability data in analyzing the nature of a specific job.

**Job Design:** A technique to integrate work content, qualifications, and rewards for each job in a way that achieves an effective fit between people, technology, and process. New opportunities for job design such as empowering employees with more decision making responsibilities are typically associated with process reengineering.
Nominal Group Technique: A structured process for reaching group consensus through anonymous idea generation by individual group members, followed by discussion and voting.

Out of the Box Thinking: A creativity technique proposed by Michael Hammer that advocates the rethinking of the norm of business operation at the outset. It challenges the designers to set “stretch goals” for the process and re-examine basic assumptions underlying current operations.

Pareto Diagramming: Based on the Pareto principle that a few causes often account for most of the effect. The diagram graphically represents problem causes that are ranked in descending order of destructiveness and indicates which causes should be targeted.

Persuasion Technique: Based on the “elaboration likelihood model” and "appropriateness-consistency-effectiveness model" from organizational behavior, these techniques articulate strategies of influence which can be used in situations where individuals publicly or privately resist BPR implementation. Specific persuasion techniques include “rejection-then-retreat”, “the commitment and consistency rule”, “social proof”, “liking”, and “artificial scarcity”.

Process Flowcharting: Typical flow chart symbols and methods are applied to depict the logic and flow of activities in a business process.

Process Prioritization Matrix: The matrix relates a set of candidate processes for BPR to the firms’ critical success factors. A cell is marked with an E if the process is essential to the CSF or a D if the process is desirable.

Reframing: A technique for gaining acceptance of new ideas by attempting to change the way a person internally frames and understands events in order to change the meaning. When the meaning changes, the person’s responses and behaviors also change.

Role Activity Diagramming: The technique represents the concepts of role, action, interaction, event, state, case, decision, and parallelism in easy-to-understand diagrammatic notations.

Search Conference: Search conferences bring all stakeholders into the same room to participate in a process of defining both the need for change and how changes should be achieved. All levels and functions related to a process are typically represented including customers, stakeholders, and suppliers.

Skills Inventory Analysis: A skills inventory keeps track of an employee’s job qualification, education and experience. On-going analysis of this inventory is critical to the success of human resource management.

Structured Interview: This interview technique is used when an interviewer’s questions and their sequence are prepared in advance, typically on a form.

Survey: A technique for collecting standardized responses from a group. A survey instrument should be constructed to elicit unbiased responses.

Team Building Techniques: These techniques involve four typical stages: “forming” (remove initial communication inhibition), “storming” (resolving turbulence related to hidden agenda), “norming” (develop trust, consensus, free flow of feedback), and “performing” (members now are honest, creative, reliable, and supportive of each other).
**Time Motion Study:** A technique of establishing an allowed time standard to perform a given task based upon measurement of work content of the prescribed method, with due allowance for fatigue and unavoidable delays. Motion study is used to analyze the various body motions employed in doing a job for the purpose of eliminating ineffective movements and speeding effective movements.

**Value-Chain Analysis:** This technique involves a systematic evaluation of the flow of a company's activities in terms of “value” (the extent to which buyers are willing to pay for a product or service). There are nine generic categories of a company’s value activities. These can be classified as primary activities (inbound logistics, operations, marketing, etc.) and support activities (human resource, technology management, etc.).

**Visioning:** A method for developing images of possible future conditions of an organization. When applied in BPR, visions of new processes are developed by identifying and progressively removing sacred cow assumptions or unsubstantiated constraints.

**Workflow Design:** The notion of workflow is rooted in the idea that business processes are sets of tasks done in prescribed order that incorporate information from various sources. There are three types of workflows: case-based, general, and ad hoc. The goal of workflow design is to make the relationships between people, procedures, information, tasks, and management explicit.