Reader Notes

1. **What is BPR today, and what is its future direction?**

2. **What advantages and challenges will organizations engaged in BPR today have five years from now?**

3. **What techniques, technologies, tools and vendors will help to re-engineer and automate critical business processes?**

The 1995 BPR Scenario focuses on the impact BPR will have on business. We differentiate between the "hype" that has permeated the business community and the achievable benefits of re-engineering, and we examine the factors that have contributed to the success of a relatively small number of organizations.

Business Process Re-engineering

BPR is the fundamental analysis and radical redesign of business practices and management systems, job definitions, organizational systems, and beliefs and behaviors to achieve dramatic performance improvements. Technology is a key enabler.

Examples

Responsiveness: An insurance company reduces loan origination times from weeks to hours.

Cost Savings: A retailer eliminates its warehouses and saves millions of dollars by having its suppliers and distributors maintain its supplies and inventory.

Time-to-Market: An automobile manufacturer brings out a new model in two years rather than five years, and increases quality.

Customer Empowerment: A financial institution empowers its customers to manage their own accounts via ATMs, kiosks and home banking.

Sales/Service Empowerment: A sales/service organization increases productivity by 30 percent by intelligently cross-selling to different types of customers, based on buying trends, credit limits and customer preferences.

BPR is dreaming up the organization that will put your organization out of business, and then attempting to become that organization.
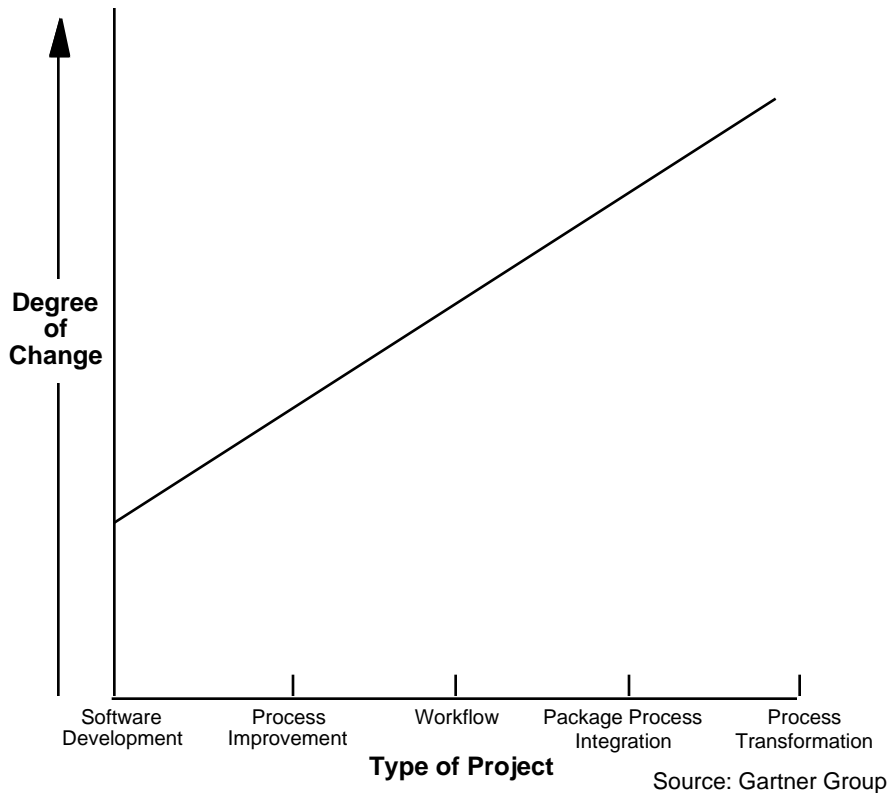

The shift from an agrarian society to an industrial society produced radical changes in the worlds of business, politics and power. The continuing shift toward a society of knowledge, information and communication is having an even more-profound influence on our organizations' futures. As advances in technology accelerate, and global competition increases, it becomes essential for an organization to be able to adapt and reinvent itself, as well as to push on to new markets and opportunities. BPR, the fundamental analysis and radical redesign of our organizations, has rapidly become the vehicle of choice for advancing organizations in this changing future. BPR drives organizations to abolish vertical silos, flatten bloated organizations, streamline processes and focus on delivering value to the customer. With this dramatic change also comes serious challenge. BPR is both a necessary and difficult journey — one in which it makes great sense to have skilled and knowledgeable guides.

Clients should assess the degree of change expected in their various types of projects, and ensure that appropriate change management procedures are used.

The Change Continuum

Degree of Change (vertical axis, arrow pointing up)

Type of Project (horizontal axis)

Software Development · Process Improvement · Workflow · Package Process Integration · Process Transformation
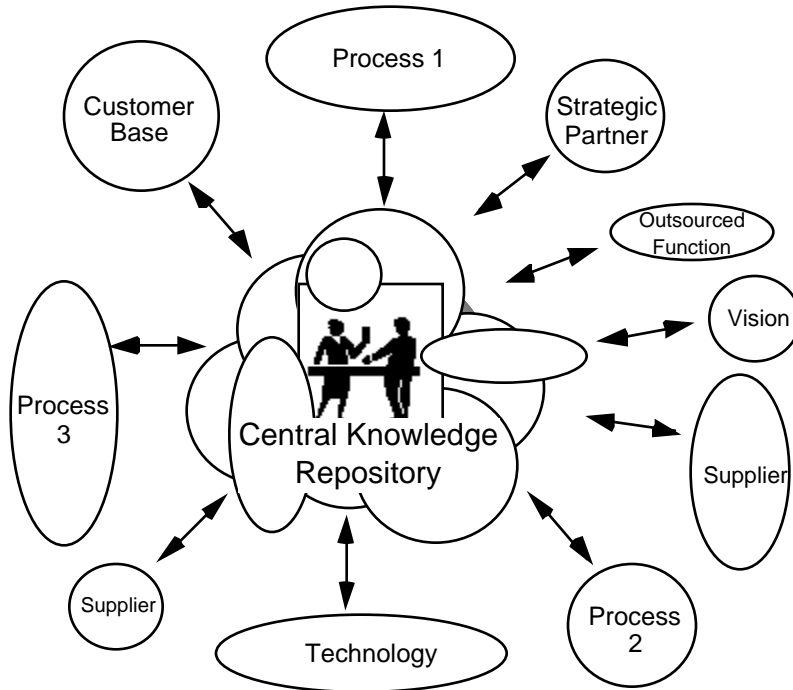
Source: Gartner Group

Today's businesses are changing constantly at many levels. BPR represents the highest degree of change. It considers: 1) issues of organizational behavior and the psychology of employees; 2) business process needs as viewed by "customers," suppliers and partners; and 3) technology solutions developed for the needs of the business. Under only one circumstance have we seen organizations succeed at changing to this degree — industrywide duress. Seventy-five percent of organizations claim to be involved in BPR projects; we believe only 15 percent are actually re-engineering their enterprises. Most organizations have good intentions and start well, but fail to meet their original objectives because they do not include the right mix of skills to address the scope of the problem — eventually settling for something less than cross-organizational process transformation. The common ingredient in most re-engineering efforts is industry duress that pressures the organization to make *dramatic* change. Without these outside forces, change initiatives fall short, but they are still capable of producing benefits.

By 2000, BPR will be the practice of dynamically engineering and disassembling components of an organization by leveraging the learned knowledge that the organization has centrally stored within a "center of excellence" (0.8 probability).

Reader Notes

Virtual, Dynamically Engineerable Learning Organization

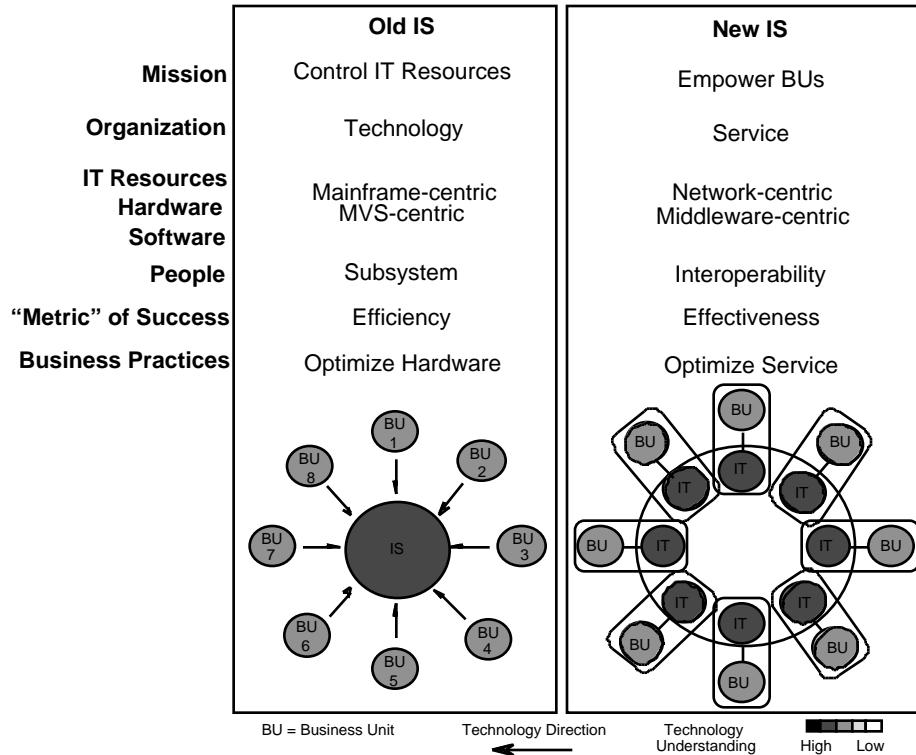Source: Gartner Group

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Key Issue: What is BPR today, and what is its future direction?

The evolution of BPR is not a fad — although the acronym probably is. One sustainable advantage of radical change is securing the ability to compete in the future business world. Today's "re-engineering" will evolve into the practice of managing and adapting to changing dynamics in markets, technology, business relationships and human resources. To do this, organizations will be forced to dynamically engineer business processes by using techniques such as RAD, and object-oriented business and system modeling. To remain flexible enough to incorporate change into the enterprise's framework, the organization must increase its ability to absorb knowledge and use it throughout all levels of the organization. "The organizations that excel in the future will be the organizations that discover how to tap people's commitment and capacity to learn at *all* levels in the organization" (Peter Senge, "The Learning Organization").

By 1999, 60 percent of all IT organizations will have realigned themselves as service providers that focus on seamlessly integrating technology solutions with business needs through the use of an enterprisewide IT infrastructure and standards (0.6 probability).

Reader Notes

	Old IS	New IS
Mission	Control IT Resources	Empower BUs
Organization	Technology	Service
IT Resources **Hardware** **Software**	Mainframe-centric MVS-centric	Network-centric Middleware-centric
People	Subsystem	Interoperability
"Metric" of Success	Efficiency	Effectiveness
Business Practices	Optimize Hardware	Optimize Service

BU = Business Unit   Technology Direction   Technology Understanding   High   Low

Source: Gartner Group

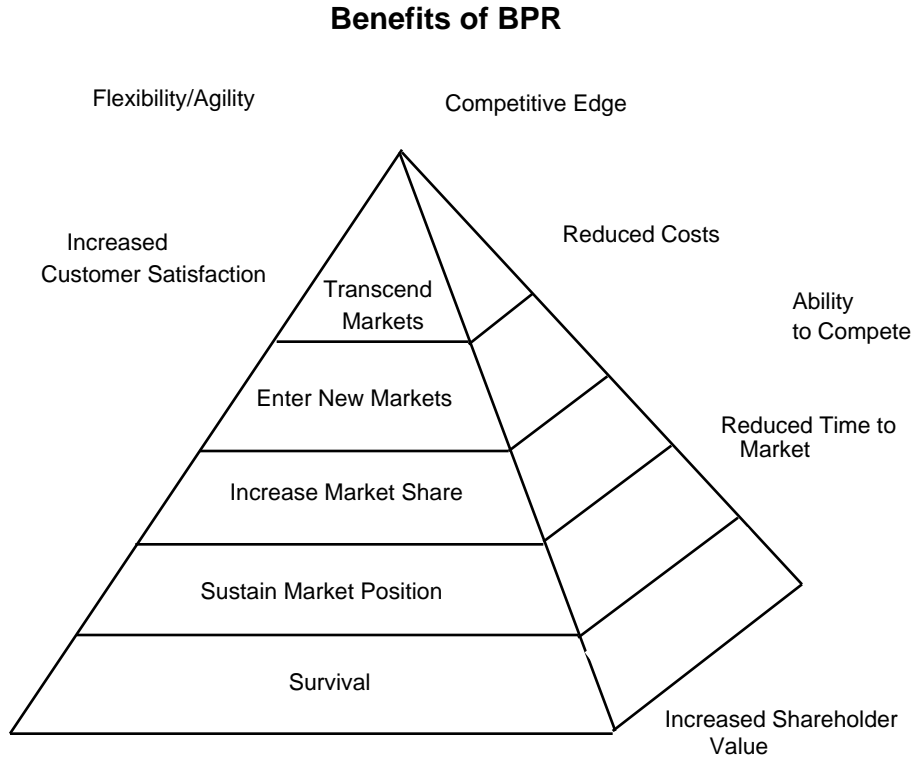**Key Issue: What is BPR today, and what is its future direction?**

Historically, IS organizations were designed to optimize an enterprise's most expensive resource: technology. As enterprises migrate toward distributed computing, IT costs are becoming a function of labor costs.

There is no single "correct" IS organization; there are common characteristics that we observe among progressive users. The most successful users are evolving toward a model that emphasizes delivering products and services to a customer — typically, an end user. We believe this will be the most successful model for IS organizations in the future. IS representatives within the business units will focus on aligning applications with the user's needs, providing a unified architecture and applying consistent methodology, development and implementation standards through the use of SLAs. SLAs will be redefined to meet business objectives rather than technological criteria.

What advantages and challenges will organizations engaged in BPR today have five years from now?

Benefits of BPR

Flexibility/Agility

Competitive Edge

Increased
Customer Satisfaction

Reduced Costs

Ability
to Compete

Transcend
Markets

Enter New Markets

Reduced Time to
Market

Increase Market Share

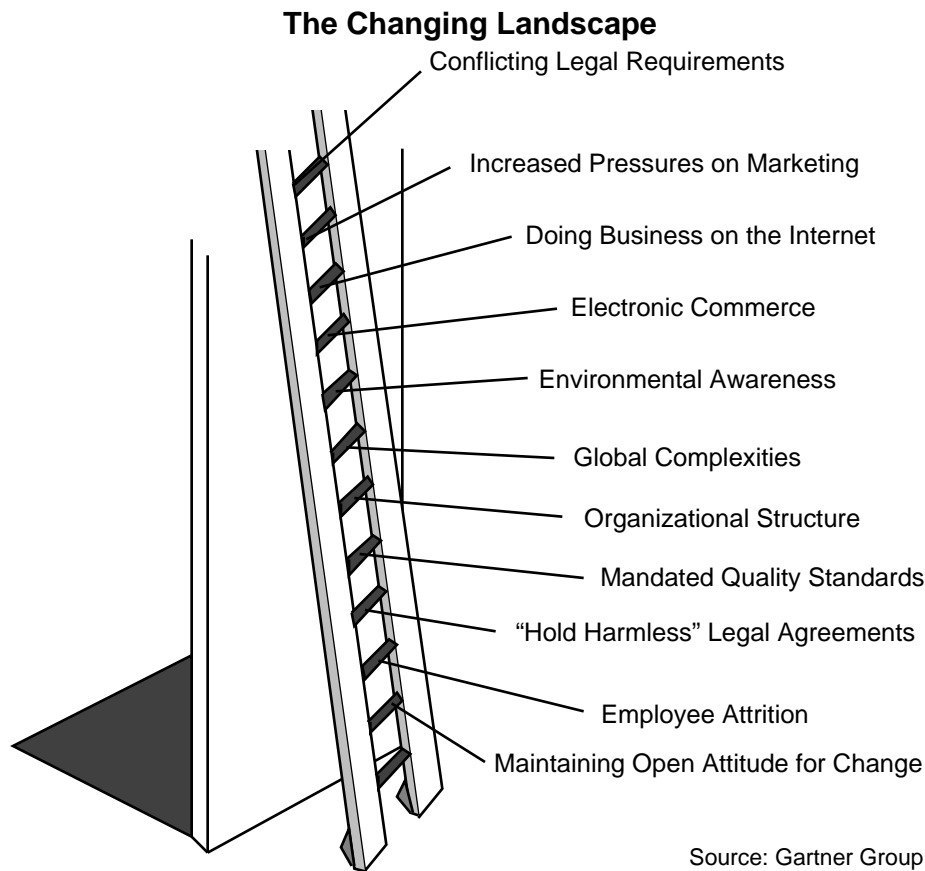Sustain Market Position

Survival

Increased Shareholder
Value

Source: Gartner Group

If an organization looks to the books for the long-term advantages of BPR, it will most likely find stories of increased throughput, shortened sales cycles, increased profitability and the like. However, benefits will vary depending on the scope of change for the project. Projects that make minor changes to applications that support processes will be lucky to survive the oncoming competition. An organization that initiates a project with the primary goal of reducing costs could sustain its position in the market. Organizations dedicated to customer satisfaction are likely to increase their current market share, while organizations that address cross-functional departmental needs by integrating new process designs through pre-existing solutions may enter new markets more slowly. Only organizations that embrace corporatewide process transformation will transcend new markets and lead their competition in the future.

Organizations beginning dramatic change initiatives will face new challenges brought on by the changing legal, market and organizational landscape.

The Changing Landscape

Conflicting Legal Requirements

Increased Pressures on Marketing

Doing Business on the Internet

Electronic Commerce

Environmental Awareness

Global Complexities

Organizational Structure

Mandated Quality Standards

"Hold Harmless" Legal Agreements

Employee Attrition

Maintaining Open Attitude for Change

Source: Gartner Group

Key Issue: What advantages and challenges will organizations engaged in BPR today have five years from now?

Although the benefits from re-engineering are real, business process transformation requires organizations to be wary of future challenges. On an organization's "ladder to success," several rungs could break — weakened by the changing legal requirements caused by global competition, the pressures on marketing information systems to provide detailed segmented market information to stimulate the demand side of the overall economic equation, and the unforeseen challenges of opening new channels of distribution through electronic commerce. Internal challenges (e.g., organizational change, employee attrition, and project selection and management) will also impede success.

The critical success factors of projects are not always documented or easily implemented.

Reader Notes

Critical BPR Success Factors

Hidden Factors

Documented Factors

- Monitor the return on IT investment.

- Apply analytical metrics to determine success.

- Engineer a flexible organizational and IT architecture.

- Do not design people out of automated systems.

- Communicate effectively with *all* constituencies.

- Analyze the critical path of the organization to determine which processes to re-engineer.

- Get senior managers' buy-in.

- Build a cross-functional team with time dedication and project priority.

- Include the IS organization.

- Set measurable goals and objectives.

- Create a strategy for change acceptance.

- Simulate and prototype new processes to anticipate outcomes.

- Use technology in innovative ways.

- Train and educate affected employees.

- Focus on customer-to-customer processes

Source: Gartner Group

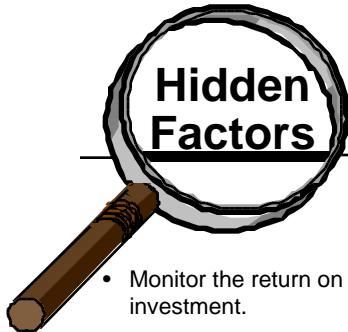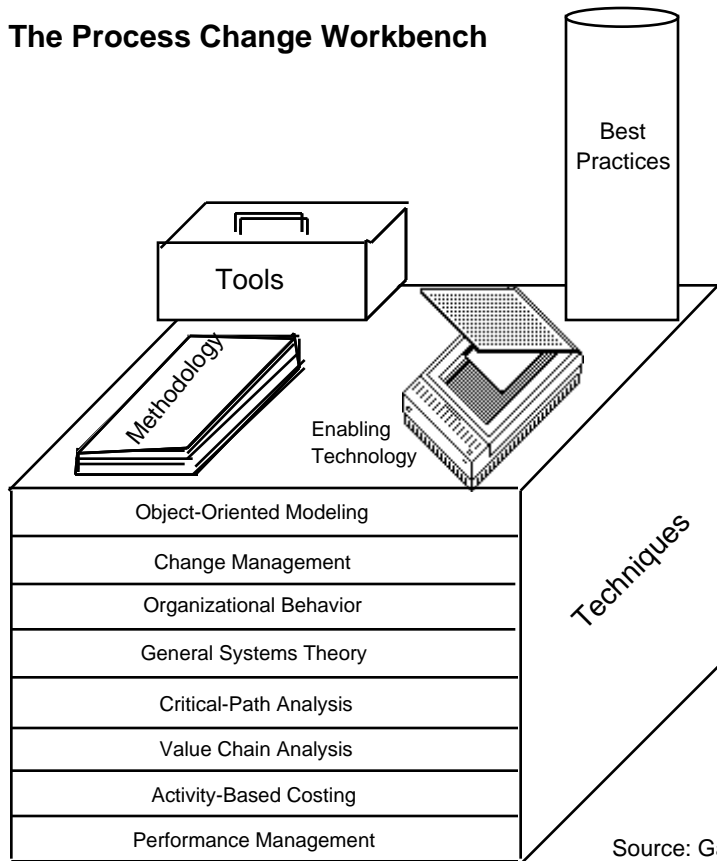**Key Issue: What advantages and challenges will organizations engaged in BPR today have five years from now?**

Successful re-engineering is determined by three major factors: 1) the analytical methods used for process re-engineering selection, 2) the management and organizational behavior techniques for implementing the change process, and 3) the methods for measuring the success of the project. Most BPR projects that fail have not carefully anticipated these procedures and have been left unable to implement sound process changes, leaving the organization with little or no benefit.

What techniques, technologies, tools and vendors will help to re-engineer and automate critical business processes?

The Process Change Workbench

Best Practices

Tools

Methodology

Enabling Technology

Techniques

| Object-Oriented Modeling |
| Change Management |
| Organizational Behavior |
| General Systems Theory |
| Critical-Path Analysis |
| Value Chain Analysis |
| Activity-Based Costing |
| Performance Management |

Source: Gartner Group

BPR combines the historically disparate practices of managing IT, business process flows, financial analysis, market pressures, competition and customer needs. In a world where external vendors are claiming to provide solutions in all these arenas, decision making becomes more complex. Cross-functional teams are required to bring the expertise to the table, but, with many ways to look at the same business process, communications can be strained. One major challenge that BPR participants face is combining these varied resources in a cohesive business vision for change. The techniques and skills captured in the change workbench will be developed over time. These include many of the traditional organizational and management strategies that have accompanied change practices, and they may also include nontraditional aspects such as modeling techniques, financial analysis capabilities and metrics for evaluating the performance of individuals, processes or enterprises.

Next-generation re-engineering tools providing all-encompassing Reader Notes
repositories of information that hold an automated methodology,
modeling and simulation technology, with implementation
features via workflow and code generation, will be available and
will be used by 2000 (0.7 probability).

BPR Tool and Methodology Evolution

- Flowchart Tools
- 4GL and
  CASE Tools
- Simulation Tools

- Empirical Modeling
- Limited Links to:
  - Code Generation
  - Workflow
  - Simulation

- Highly
  Integrated

- Virtual Reality
  Modeling, Simulation
- Real-Time
  Object-Oriented
  Application Generation
- Knowledge-Based
  Monitoring and
  Exceptions Analysis
- Embedded Change
  Acceptance

Tools

Methods

- Integrated
  Online Methods
  and Analysis
- Less Reliance on
  Consultants.

- Paper-Based
  Methods
  Developed by
  the Big 6 Firms

- Org. Development
- TQM
- Software Dvlpmt.
- Strategic Planning
- Financial Analysis

Specialist Only   Manager
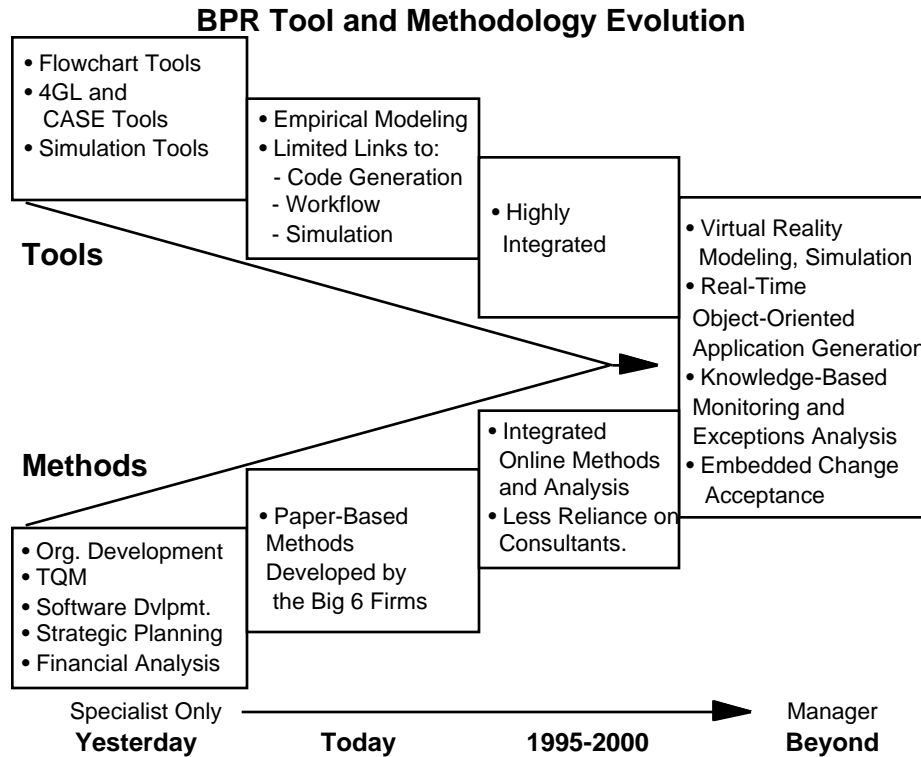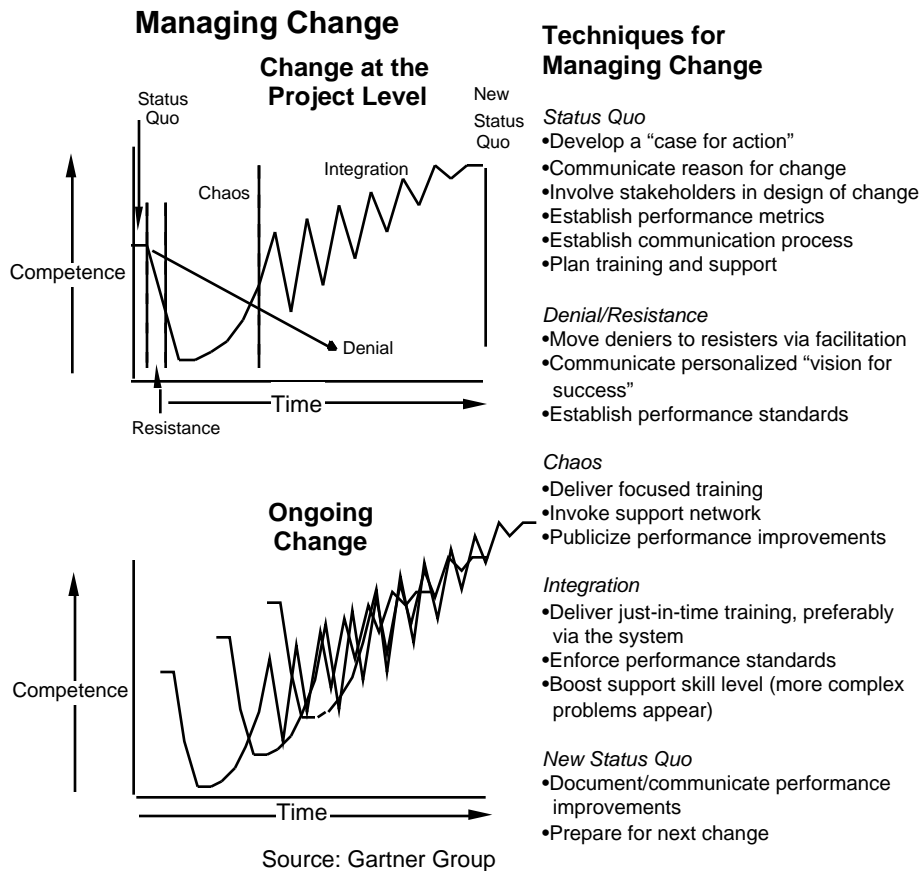**Yesterday**   **Today**   **1995-2000**   **Beyond**

Source: Gartner Group

Key Issue: What techniques, technologies, tools and vendors will help to re-engineer
and automate critical business processes?

Methods that were developed in the past to ward off international competitive pressures are
converging with technological innovations in process analysis. The intersection of these
disciplines marks the birthplace of the next-generation business engineering tool. This enables
organizations to model, simulate and chart workflow patterns and also to generate code,
provided the vendors in these markets continue to form partnerships and integrate their
technologies. The widespread adoption of object-oriented modeling techniques will also
catalyze the move toward dynamic process change. The tools of the future will use virtual
reality to provide business executives with a walk-through environment where they can run
real-time simulations of process flows to prototype business practices and supporting
technologies. The leap to this tool level depends on two major advancements: the maturation of
advanced technologies such as virtual reality, object orientation and knowledge-based systems;
and a shift in the organization's "mind set" from resisting change to accepting it, learning and
keeping an open mind about more change in the future.

Managing change will be the no. 1 challenge for organizations that are conducting BPR projects through 2000 (0.8 probability).

Reader Notes

Managing Change

Change at the Project Level

Status Quo

New Status Quo

Integration

Chaos

Competence

Denial

Time

Resistance

Ongoing Change

Competence

Time

Source: Gartner Group

Techniques for Managing Change

Status Quo
•Develop a "case for action"
•Communicate reason for change
•Involve stakeholders in design of change
•Establish performance metrics
•Establish communication process
•Plan training and support

Denial/Resistance
•Move deniers to resisters via facilitation
•Communicate personalized "vision for success"
•Establish performance standards

Chaos
•Deliver focused training
•Invoke support network
•Publicize performance improvements

Integration
•Deliver just-in-time training, preferably via the system
•Enforce performance standards
•Boost support skill level (more complex problems appear)

New Status Quo
•Document/communicate performance improvements
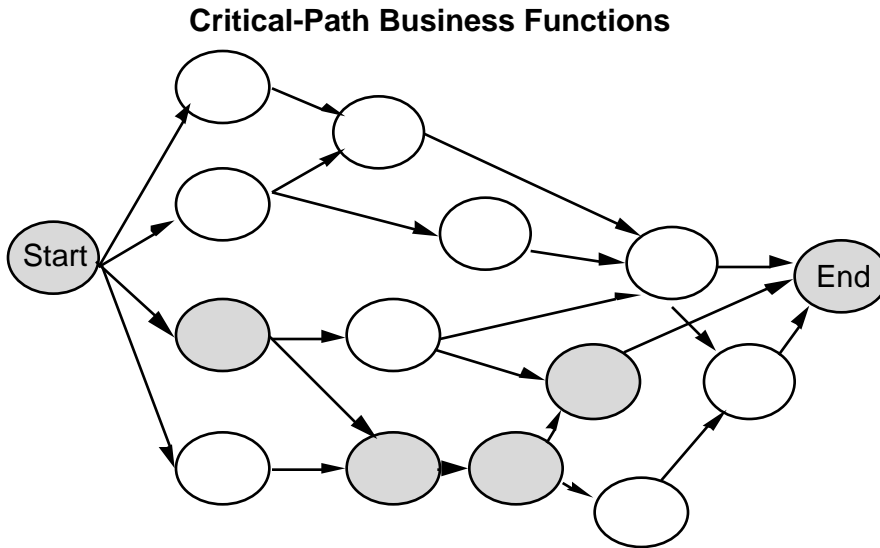•Prepare for next change

Key Issue: What techniques, technologies, tools and vendors will help to re-engineer and automate critical business processes?

Change is the process of going from one comfortable position (status quo) to another. According to Virginia Satir's Change Process Model, the six steps of change are: 1) status quo, 2) foreign element (the change event), 3) response (denial or rejection), 4) chaos, 5) integration and 6) new status quo. Organizations seeking benefits from re-engineering must address each of these phases with the points above — at a minimum. Over the long term, as we move closer to the model of the dynamically engineerable organization, managing change on an ongoing basis will mean creating order out of continued chaos by striking a balance between the integration of old and new methods of conducting business. This will be the no. 1 challenge for organizations that are conducting BPR projects, and for organizations that have completed dramatic change initiatives but are striving for competitive flexibility in 2000 (0.8 probability).

An organization that does not apply theories of critical-path analysis when selecting processes for re-engineering will have: 1) a 50 percent chance of gaining little or no benefit, 2) a 25 percent chance of harming itself, and 3) only a 25 percent chance of gaining benefit.

Reader Notes

Critical-Path Business Functions

Source: Gartner Group

Key Issue: What techniques, technologies, tools and vendors will help to re-engineer and automate critical business processes?

The critical path of a dependent set of business functions represents the set of functions that constrain or limit the enterprise's profitability and throughput. Only by improving critical-path processes can an enterprise improve its profitability and efficiency. Therefore, these functions represent the priorities of the BPR effort and, as such, they set the IS agenda. However, we must note that, when these functions are optimized, there is a greater than 0.5 probability that the critical path will move, dictating follow-up projects. Braess' Paradox has shown us that an organization that does not apply theories of critical-path analysis when selecting processes for re-engineering will have: 1) a 50 percent chance of gaining little or no benefit, 2) a 25 percent chance of harming itself, and 3) only a 25 percent chance of gaining benefit.
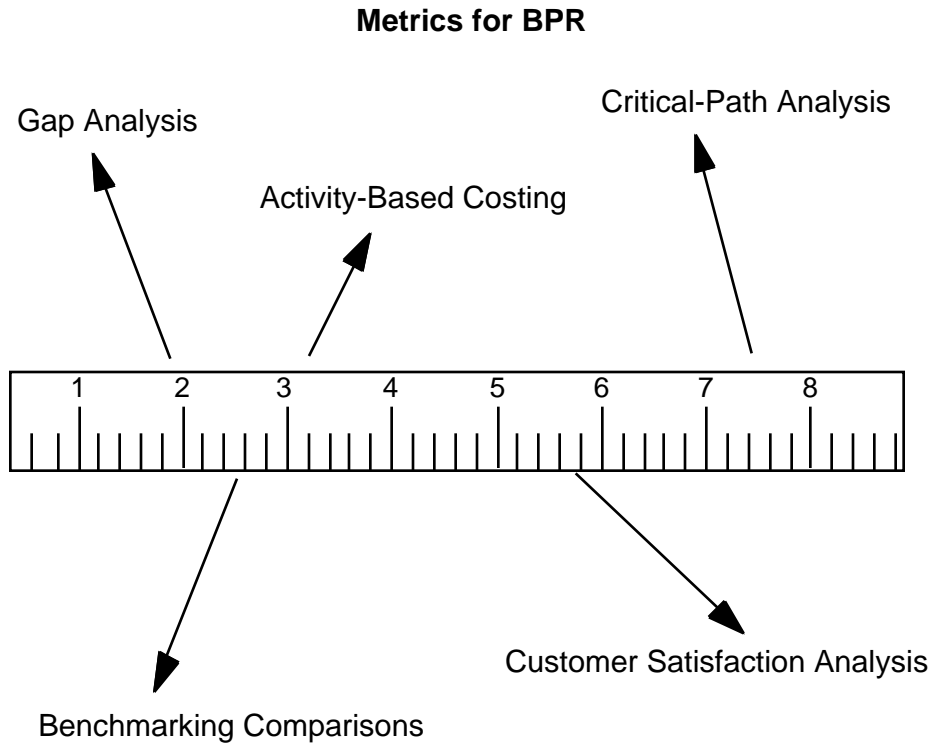
Seventy percent of organizations conducting BPR projects do not measure the effectiveness of new processes.

Metrics for BPR

Gap Analysis

Critical-Path Analysis

Activity-Based Costing

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

Customer Satisfaction Analysis

Benchmarking Comparisons

Source: Gartner Group

Key Issue: What techniques, technologies, tools and vendors will help to re-engineer and automate critical business processes?

The BPR area that holds the most opportunity for growth is the "before and after" metrics and analysis to determine project success. Here, we list several key metric programs that should be used by organizations attempting process change. This list is by no means exhaustive, but it provides a solid base from which organizations can build measurement programs. Our studies show that approximately 70 percent of organizations conducting BPR projects do not implement such measurement programs. Initiatives that fall into this category will fail or continue to grapple with the issue of determining the project's level of success.

Technology will play two roles in BPR: it will enable applications and it will enable the BPR process itself.

Reader Notes

Representative BPR Technologies

Telephony

Data Mining

Multimedia

Simulation

Object Orientation

ATM

Mobile Systems

Project Management

Groupware

Smart Cards

Links to
Applications
Development

Knowledge-Based Systems

Electronic Commerce

Wireless Communications

Data Visualization

Speech Recognition

Process Modeling

Client/Server

Neural Networks

Workflow Tools

Parallel Processing

Fuzzy Logic

Animation

GPS   Imaging

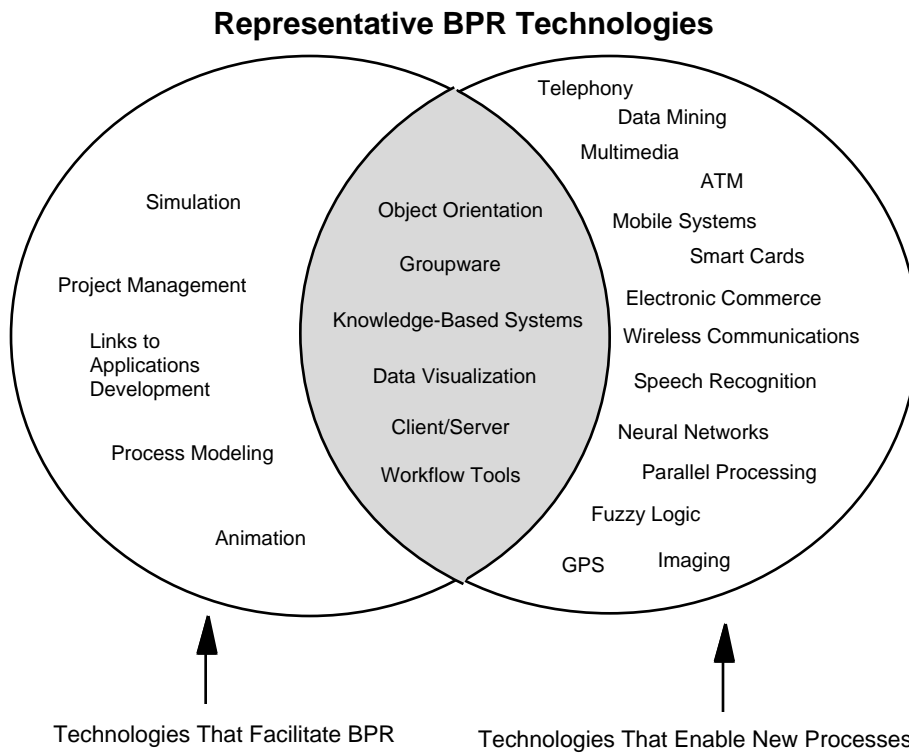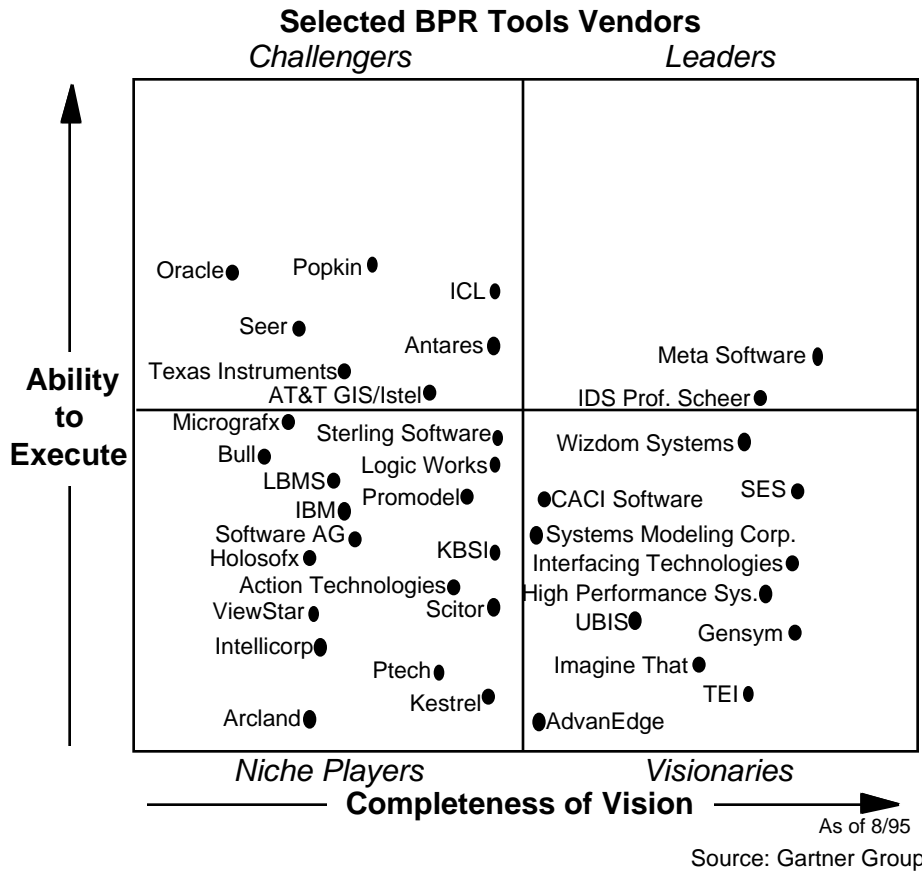Technologies That Facilitate BPR

Technologies That Enable New Processes

Source: Gartner Group

Key Issue: What techniques, technologies, tools and vendors will help to re-engineer and automate critical business processes?

The technologies that contribute to the success of re-engineering and change initiatives fall into two categories — those that enable change by providing new opportunities for doing business (e.g., mobile business units and wireless communications), and those that facilitate change (e.g., modeling tools that possess links to applications development). The infrastructure technologies that contribute to both of these categories will enable new methods of doing business, and provide a framework for implementing change. For example, distributed client/ server architectures will enable collaborative process flows and facilitate the process modeling and prototyping stage of a BPR project, because many users can help construct the "as is" model. Likewise, object-oriented modeling techniques are advancing the capabilities to simulate and model business systems, and they are also providing a flexible business infrastructure for the future that will readily lend itself to dynamic business engineering.
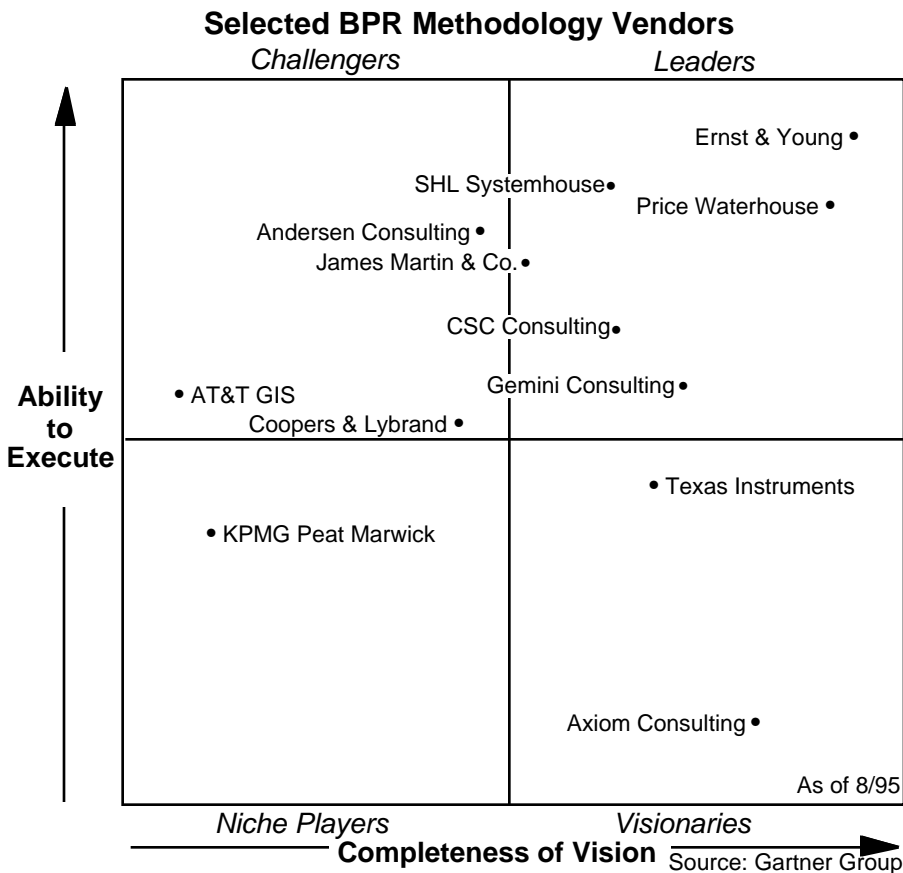
Selected BPR Tools Vendors

Challengers   *Leaders*

Oracle●   Popkin ●
                        ICL ●
    Seer ●
                Antares ●   Meta Software ●
Texas Instruments●
        AT&T GIS/Istel●   IDS Prof. Scheer ●

Micrografx●
        Sterling Software●   Wizdom Systems ●
    Bull●   Logic Works●
        LBMS●   SES ●
        Promodel●   ●CACI Software
    IBM●
Software AG●   ●Systems Modeling Corp.
Holosofx ●   KBSI●   Interfacing Technologies●
    Action Technologies●   High Performance Sys.●
ViewStar ●   Scitor●   UBIS●
                                Gensym ●
Intellicorp●
                            Imagine That ●
            Ptech●   TEI●
                Kestrel●   ●AdvanEdge
    Arcland●

Ability to Execute (vertical axis label, left side)

Niche Players   *Visionaries*

Completeness of Vision →

As of 8/95

Source: Gartner Group

Key Issue: What techniques, technologies, tools and vendors will help to re-engineer and automate critical business processes?

Although the number of vendors offering BPR functionality will continue to grow, only a handful of vendors will offer the full life cycle of tools integrated with applications development and also have the requisite marketing muscle, technological depth, distribution channels, customer support and partnerships to be major players. Today, there are few vendors that can be classified as BPR tool leaders, given our strict criteria for BPR tools. In addition to meeting these technological criteria, the vendors that will eventually move into the leaders' quadrant will: 1) use object technology, 2) support common platforms (e.g., Windows, NT, OS/2, Macintosh and Unix), 3) support successful methodologies, and 4) offer reasonable or even free runtimes that will eventually allow an organization to roll out BPR functionality to most of its desktops.
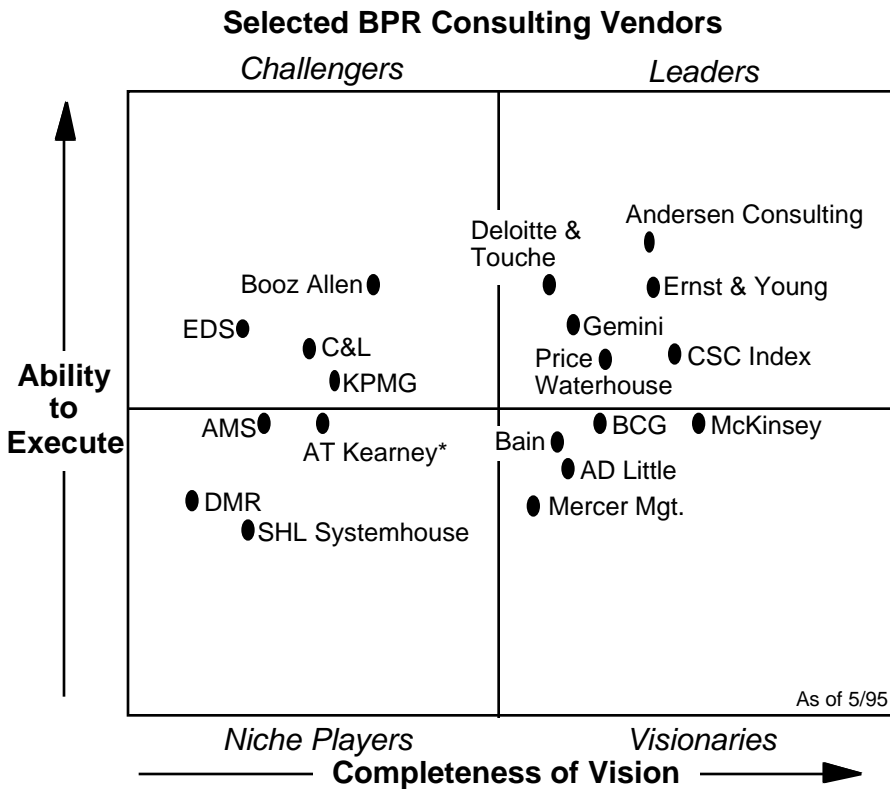
Selected BPR Methodology Vendors

Challengers   *Leaders*

Ernst & Young •

SHL Systemhouse•

Price Waterhouse •

Andersen Consulting •

James Martin & Co.•

CSC Consulting•

Gemini Consulting•

• AT&T GIS

Coopers & Lybrand •

Ability to Execute

• Texas Instruments

• KPMG Peat Marwick

Axiom Consulting •

As of 8/95

Niche Players   *Visionaries*

Completeness of Vision   Source: Gartner Group

Key Issue: What techniques, technologies, tools and vendors will help to re-engineer and automate critical business processes?

While there are clear leaders on the planning horizon, some smaller players are limited by their size, some larger players have surprising shortcomings, and some new players could take a strong market position.

Prospects for worldwide BPR consulting success in 1998.

Selected BPR Consulting Vendors

Challengers   *Leaders*

Andersen Consulting

Deloitte &
Touche

Booz Allen●

EDS●

C&L

KPMG

Ernst & Young

Gemini

Price ●
Waterhouse

CSC Index

**Ability
to
Execute**

AMS●

AT Kearney*

Bain●

●BCG   ●McKinsey

AD Little

Mercer Mgt.

●DMR

SHL Systemhouse

As of 5/95

Niche Players   *Visionaries*

Completeness of Vision ⟶

*EDS signed a letter of intent in June of 1995 to acquire AT Kearney.

Source: Gartner Group

Key Issue: What techniques, technologies, tools and vendors will help to re-engineer and automate critical business processes?

The BPR consulting firms' quadrant is still filled primarily by the "Big Six" and traditional management consulting firms. Medium-sized and large service organizations (e.g., those of IBM, Oracle and Unisys) will provide BPR services to clients when asked, but these services will not be part of core business strategies. There will continue to be a place for unique, regional BPR consulting firms as the market matures. Revenues in the overall BPR consulting market during 1994 were more than $3 billion. Vendors differ significantly in their ability to provide expertise in the three BPR competency areas: business process, organization and IT. When selecting a service provider, organizations should assess vendors by these criteria, and use other selection criteria, such as the track record of the individual engagement managers, industry strength, organizational structure, flexibility in delivery and track record of individual engagement managers.

- By 2000, BPR will be the practice of dynamically engineering and disassembling components of an organization by leveraging the learned knowledge the organization has centrally stored within a center of excellence (0.8 probability).

- By 1999, 60 percent of all IT organizations will have realigned themselves as service providers that focus on seamlessly integrating technology solutions with business needs through the use of an enterprisewide IT infrastructure and standards (0.6 probability).

- Next-generation re-engineering tools providing all-encompassing repositories of information that hold an automated methodology, modeling and simulation technology, with implementation features via workflow and code generation, will be available and used by 2000 (0.7 probability).

- Managing change will be the no. 1 challenge for organizations that are conducting BPR projects through 2000 (0.8 probability).

- An organization that does not apply theories of critical-path analysis when selecting processes for re-engineering will have: 1) a 50 percent chance of gaining little or no benefit, 2) a 25 percent chance of harming itself, and 3) only a 25 percent chance of gaining benefits (0.8 probability).