Court Business Process Enhancement Guide

An Aid to Process Improvement and Process Reengineering
For Judges, Court Managers, and
Court Information Technology Directors

SEARCH, The National Consortium for Justice Information and Statistics
and
National Center for State Courts

Prepared under the direction of
Conference of State Court Administrators and
National Association for Court Management

Joint Technology Committee
Technology Reengineering Subcommittee

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We gratefully acknowledge the leadership and contributions of a number of judicial leaders whose shared vision led to the development of this document (see page ii).[1] The need for a guide for court managers on the application of business process review techniques and tools for employing technology in court systems was first proposed by Mr. Bob Roper, Colorado Court CIO, at a meeting of the COSCA/NACM Joint Technology Committee (JTC) in March 2000. Mr. John Greacen, who at the time was COSCA Chair of the JTC, appointed Alameda (CA) Superior Court Judge Judith Ford to chair a 10-member steering committee to develop a "Reengineering Toolkit." Subsequently, a smaller working group, including Judge Ford, Mr. Greacen and Mr. Roper, along with staff from SEARCH, The National Consortium for Justice Information and Statistics, led by Courts Program Director Francis L. Bremson, and the National Center for State Courts (NCSC), led by Ms. Laura Klaversma, Court Services Operations Manager, Court Services Division, worked as a team to document the use of reengineering tools and best practices in courts throughout the country, and to develop the outline for the final product. NCSC Principal Court Management Consultant David Steelman joined the team in 2002, and combined the committee's documentation and analysis with his own independent research into business process review literature to produce this Guide (available online at both the SEARCH and NCSC Websites, www.search.org and www.ncsconline.org). We also wish to express our appreciation to the National Task Force on Court Automation and Integration, the project advisory committee to the Bureau of Justice Assistance (BJA) Court Information Systems Technical Assistance Project grant to SEARCH, which authorized grant funding to staff this research effort.

Special thanks go to Ms. Amanda Murer and Ms. Anne Skove of the National Center's Knowledge and Information Service for their extensive research in support of this project; to Ms. Twyla Cunningham, Ms. Linda Townsdin, and Ms. Jane Bassett of SEARCH for their assistance in editing and preparing the Guide for publication; and to all the judges, court managers, and court information technology professionals in Phoenix, Arizona, Houston, Texas, Oakland, California, and the New Jersey Administrative Office of the Courts, who graciously shared their reengineering experiences with the project team during our site visits, and offered real-world advice regarding the use of business process enhancement techniques and tools.

Intended as an aid for judges and court managers who deal with information technology in the courts, this Guide draws on an extensive body of print and electronic literature on process improvement and process reengineering. It relies on the insights of such experts as Mr. Michael Hammer, Mr. Richard Chang, Mr. James Harrington, and other prominent process-improvement and process-reengineering professionals from the private and public sectors. An

[1] Background on SEARCH, The National Consortium for Justice Information and Statistics, and the National Center for State Courts, and biographical information about project staff are included as Appendix A.

especially valuable resource is from the Federal government — the U.S. General Accounting Office's *Business Process Reengineering Assessment Guide* (1997) (http://www.gao.gov/special.pubs/bprag/ai10115.pdf), which served as an important reference source throughout this Guide.

Technology Reengineering
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Foreword

Developed under the auspices of the Joint Technology Committee (JTC) of the Conference of State Court Administrators (COSCA) and the National Association for Court Management (NACM), this Guide is a work product of the JTC's Technology Reengineering Subcommittee. The Guide is addressed to judges, court managers, and court information technology (IT) directors at both the State and the trial court level. It is intended to help courts prepare for technology change and adjust to the changes that technology brings to the courts.

Why Focus on Business Processes in Courts?

The business processes employed in clerks' offices, court administration offices, courtrooms, and judges' chambers were first developed to accomplish specific tasks when courts had few staff and a relatively small number of cases and customers. Processes and procedures were developed to respond to needs as they arose, and were rarely updated to keep pace with changes in the court environment, or were modified principally to respond to the needs of the court staff rather than the public.

As courts grew and responsibilities were divided among different offices and departments or divisions, processes and operations became more bureaucratic. Courts rarely stepped back to address the impacts of changes or to analyze the business processes to determine how to operate most efficiently or effectively. Along the way, customer service became a luxury rather than a priority. Business processes became less effective, more labor-intensive, and more time-consuming.

Over the past 30 years, three related trends have combined to bring pressure on the courts to reexamine existing policies and procedures: (1) the proliferation of IT resources; (2) declining public trust and confidence in the courts;[2] and (3) workloads increasing faster than the ability of funding agencies to meet them.[3] Proliferation of IT increased the public's expectation that the justice system should be able to know instantly everything it needed to know about criminal defendants. The system's inability to deliver on this expectation has led to the growing decline in the level of public respect for the justice system in general, and for the court system in particular.[4] And as technology has enabled us to do more with less, resources have continued to decline, even as workloads have continued to increase.[5]

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[2] Yankelovich et al., "Highlights of a National Survey of the General Public, Judges and Community Leaders," *State Courts: A Blueprint for the Future* (Williamsburg, VA: National Center for State Courts, 1978) p. 21 [Hereafter, Yankelovich]; American Bar Association, *Perceptions of the U.S. Justice System* (Chicago: 1999); and National Center for State Courts, *How the Public Views the State Courts, A 1999 National Survey* (Hearst Corp.: 1999).

[3] National Center for State Courts, *State Court Workload Statistics, 2000-2001* (Williamsburg, VA: 2002). Hereafter, NCSC.

[4] Yankelovich, ibid.

[5] NCSC.

The COSCA/NACM Joint Technology Committee and Business Processes in Courts

The JTC has been promoting the development and adoption of innovative technology in the courts for nearly a decade. As its strategic plan indicates, the Committee recognized that many lessons have been learned during this time, including the need to link business process reengineering with the implementation of technology, if success is to be achieved.[6] The JTC's strategic plan warns about designing solutions that electronically replicate manual systems. Business process reengineering is the discipline that assumes that in order to be effective, we must allow technology to drive changes in processes and we must change processes to leverage the potential of technology:

> "Courts … design automated systems to reproduce their existing work processes rather than take advantage of technological capabilities to redesign those processes to do them more efficiently. … At best, we can be said to have moved from the quill pen to the typewriter to the keyboard."[7]

The JTC's vision is to use technology to help trial courts serve the needs of the public more fully, at an affordable cost. To do so, courts must radically change the way they offer services to the public and conduct business as they implement these new tools. IT provides an opportunity to improve automated support of court operations, which will facilitate the movement of court services from quill pens to the 21st century. While the technology to do so is available, courts require education and assistance in improving business processes. For this reason, the JTC established the Technology Reengineering Subcommittee.

The Technology Reengineering Subcommittee and this Guide

The goals of the Technology Reengineering Subcommittee are to:

- Help court leaders understand how to improve business practices and why these improvements are essential to success with technology.
- Provide resources and methodologies to support the full range of process improvement approaches.
- Teach court leaders how to apply these tools in their individual courts.

This Guide *(*available online at both www.search.org and www.ncsconline.org) is intended to help the subcommittee achieve these goals. The objective of this document is to show judges, court managers, and court IT directors why business process enhancement is important, and to help them understand the methods and tools for process change. These objectives are accomplished by focusing on the processes and tools that courts can use to improve, redesign, or reengineer the court work process, and thereby to

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[6] Conference of State Court Administrators/National Association for Court Management Joint Technology Committee, *Third Long Range Plan: July 2001 – June 2004*, First Draft, May 4, 2001, p. 2.

[7] Ibid.

leverage the value of technology to help courts become more effective and efficient in their delivery of services to citizens. This Guide discusses the four steps to achieving business process enhancement and the different methods, tools, and techniques to aid that effort, which are both user-friendly and visually attractive, so they will serve as helpful aids for process improvement and process reengineering in the courts.

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Chapter I. An Introduction to Business Process Enhancement

What is Business Process Enhancement?

The purpose of this Guide is to help chief judges, court administrators, clerks of court, court information technology (IT) directors, and other court managers who deal with IT prepare for technology change and adjust to the changes that technology brings to the courts. The Guide's focus is on how to enhance the **business processes** in courts.

> "Business Process" is a group of related activities by which a court or any other organization uses its resources to provide defined results in support of its mission, goals, and objectives.[1]

In every court, there are hundreds of business processes going on every day. There are a host of business processes associated with such court activities as the creation, maintenance, and updating of case records; the calendaring of cases, conduct of courtroom proceedings, and entry of court decisions in the record; and the management of case flow, personnel, finances, equipment, and facilities. A large number of these processes are repetitive tasks or activities, and these may be potential candidates for enhancement with the use of court technology. By **business process enhancement** (BPE), we mean:

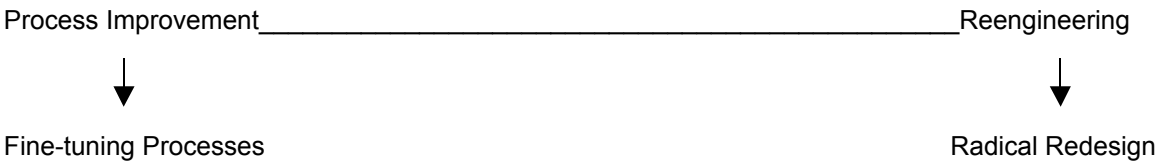
> The establishment of goals or expectations for one or more processes, analysis of how those processes are actually carried out in a court or any other organization, and adjustment of those processes if their results do not meet the goals or expectations. **Process improvement** and **process reengineering** refer to the scope of the process review, from process improvement of a specific function or activity to a fundamental restructuring or reengineering of a major function or system.

What are Process Improvement and Process Reengineering?

Process improvement and process reengineering are BPE approaches aimed at streamlining the way a court or other organization does its work, and exist at opposite ends of the BPE continuum (see Figure 1):

[1] H. James Harrington, *Business Process Improvement: The Breakthrough Strategy for Total Quality, Productivity and Competitiveness* (New York: McGraw-Hill, 1991). Hereafter, Harrington.

Figure 1. Project Scope Continuum



Process improvement focuses on fine-tuning existing processes:

> Process improvement is a disciplined approach to the simplification and streamlining of business processes, using measurements and controls to aid continuous improvement.[2]

Process reengineering involves a total re-thinking of an existing function or creation of a new function:

> Process reengineering is a disciplined approach to the fundamental rethinking and *radical redesign* of business *processes* to bring about *dramatic* improvements in performance.[3]

Judges and court managers routinely look for ways to improve operating efficiencies because some business need has been identified. Regardless of the proposed solution, process improvement and process reengineering provide *disciplined* approaches to the analysis of existing processes to facilitate design and implementation of that solution. Frequently, the solution will involve either the application of new technology or the modification of existing technology used in the process. At the same time, the differences between process improvement and reengineering are less important than their commonalities — either or both may be applied at any point in the development or enhancement of any operational system.

An example of the difference in scope between business process review and reengineering may be seen in how courts are responding to the business need to provide greater physical and data security in the aftermath of the events of September 11, 2001. By and large, courts have opted to tighten up procedures — installing metal detectors, inspecting briefcases, requiring photo IDs, etc.[4] Each procedural change or introduction of technology involved a review and restructuring of existing processes. On the other hand, a court thinking "outside the box" might wish to consider conducting judicial processes electronically, thereby eliminating or

[2] Ibid.

[3] Ibid.

[4] Lawrence P. Webster, "Survey of Court Responses to Events of 9/11," unpublished survey developed for the SEARCH/Bureau of Justice Assistance (BJA) National Task Force on Court Automation and Integration, April 2002. Interestingly, a significant minority of courts responding to the survey reported they had reduced security equipment and personnel due to a decline in revenues that had also followed the events of September 11, 2001.

substantially reducing the need for the court's physical facilities and, therefore, the need for increasing expenses for the physical facilities.[5] Business process reviews resulted in incremental efforts to improve courthouse security. The virtual courthouse proposal would require a total reengineering of the judicial process to evaluate whether the purposes of the courts and the justice system could be accomplished as well or better outside conventional court facilities, conceivably at a reduced risk to court facilities and the public, and at a reduced overall cost to the court. In both cases, technology could be acquired or enhanced to facilitate the new processes. In either case, a *business need* required the development of a *new solution*, which may or may not have been *determined, designed, or implemented* through the application of *disciplined process improvement or process reengineering approaches,* and the design for which may have included *methodologies, techniques, and tools* to *leverage* the potential impact of *existing or new technologies*.

Other examples of the differences between process improvement and reengineering approaches to similar problems appear in Table 1. In nearly every case, each project was developed to address a *business need*; each presumes the need to analyze existing procedures (As Is) and design of new procedures (To Be), either as a process improvement or a process reengineering effort. Most involve or could involve modification of existing or new *technology*. Integrating technology into the system design would enhance the effectiveness of the overall solution.

[5] Exploration of the feasibility of moving to a virtual courthouse was one of nine recommendations issued by the SEARCH/BJA National Task Force on Court Automation and Integration at a meeting held at St. Simon's Island, Georgia, in November 2001 to assess the implications of those events on court IT.

Table 1. Practical Examples of Process Improvement and Process Reengineering in Courts

Business Needs	Process Improvement	Reengineering
1. Multiple jurisdictions in county use different traffic citation forms; data entry process slow	Create a uniform citation	a. Paperless court; convert from paper to imaged documents b. Convert from imaged to e-filed documents
2. Court dismisses criminal cases due to failure to comply with speedy trial rule	a. Reassign judicial resources to hear more cases b. Establish case-processing time standards; track and report time between events and from filing to disposition	Resource allocation: Plan to try all pending cases in record time (e.g., 30 days) via massive infusion of temporary or visiting judges and access to virtually unlimited rented or temporary courtroom facilities
3. Mail unsorted; unstamped complaints not on ROA at end of day/shift; increased overtime	a. Establish time processing standards for mail, complaint processing b. Revise processes	a. Automated processes b. Reorganize clerk staff from specialists to generalists
4. Imbalance in judicial caseloads; case assignment system does not account for complexity	Assign case weights in assignment process	Assign case weights in assignment process
5. Judges treating complex cases differently; bar irate	Establish uniform process for all complex civil cases	
6. Noncompliance with mandate to report all domestic violence (DV) orders to law enforcement	Develop manual process; separate DV orders for reporting purposes	Automate protective order system; automatically populate State and Federal protective order databases
7. Attorney scheduling	Bar, courts agree to establish policy, criteria, communications protocol; system self-executing	Automated conflict schedule resolution system tied to all courts, all attorneys
8. Backlog at counter; clerks can't process filings due to demands to retrieve files, copy documents, etc.	a. Provide access to files, public copier b. Allow public orders by phone c. Hire contractors to make copies, retrieve files	Provide access to court database via computer

9. Numerous examples of public need for information, explanation; public, media, funding agency criticism; court call for improved customer service	a. Better public information materials, brochure, Web site regarding procedures, parking, directions to the courthouse b. Information booth c. Assign more experienced staff to front counter d. Improved courthouse signage	
10. 90% of divorce litigants unrepresented by counsel; lack of understanding of processing, thus causing processing delays	Pamphlet, brochures describing parties' rights, processes; sample forms	Self-service Center program to advise *pro se* litigants in all aspects of divorce proceedings and working out the interrelationships among the court, clerk's office, legal services, pro bono attorneys, process servers, State motor vehicle licensing agency, and State and local bar associations
11. Redundant data entry; delay in getting warrants from court to law enforcement in the field; losing defendants in jail and at the courthouse	Need for better information exchange; identify needs and sources; review all information exchange processes in local justice system	Develop integrated justice information system; data captured at case initiation and used many times; provide access to information not otherwise available needed to improve quality of decision-making; timely sharing of critical data; information automatically published and subscribed to populate databases throughout the system

Chapter II. How to Enhance Business Processes in Your Court

In almost every State, courts and other government entities are being asked to improve services to citizens while at the same time reducing (or at least not increasing) the costs of day-to-day operations. To respond effectively to these twin pressures, the court must consider changing the way it carries out its everyday work activities — in other words, enhancing business processes — without running afoul of procedural requirements in individual cases. As an agent of stability and continuity in society, the court may find itself operating with business processes that were designed before the emergence of today's information technologies. Courts may thus not be in a position to meet their mission and strategic goals in an effective and efficient fashion. Courts may consequently need to consider changing outmoded work processes in order to use the new technologies as tools to aid the delivery of improved justice services to parties and other citizens who use the court.

This chapter outlines a four-step approach to changing the court's business processes, either through process improvement or process reengineering. Figure 2 shows those steps along with a checklist of the activities involved in completing the steps. In this chapter, we provide a brief overview of the four steps and related activities.[6]

An underlying premise of this Guide is that judges, court managers, and court IT directors must take a systematic approach to BPE. The approach we suggest here can be used in both large and small efforts to change business processes. It offers a means to consider the impact of such changes not only within the court itself, but also their impact on other institutional participants in the work the court does every day.

[6] *See* U.S. Government Accounting Office, Accounting and Information Management Division, *Business Process Reengineering Assessment Guide* (GAO/AIMD-10.1.15, 1997) www.gao.gov/special.pubs/bprag/ai10115.pdf.

Figure 2. Checklist of Steps to Enhance Business Processes in the Courts

Step One: Establish an Appropriate Foundation

- Develop an appropriate governance and management structure
- Set business objectives and priorities to court's strategic mission and goals
- Assess organizational readiness and decide on a process enhancement approach
- Begin to manage expectations and build support for change
- Appoint a process owner, a project manager, and a capable project team
- Determine the role of consultants

Step Two: Measure "As Is" versus "To Be" Gap and Develop Feasible Alternatives to Existing Court Business Processes

- Document and analyze the current "as is" processes
- Benchmark and set enhancement ("to be") goals; conduct gap analysis
- Develop alternative process solutions
- Identify and assess potential implementation barriers
- Analyze cost/benefit alternatives

Step Three: Choose the Desired Solution and Plan for its Implementation

- Choose the best alternative
- Make the case for the desired solution
- Develop the details of the desired solution
- Develop a plan to manage implementation
- Plan to manage the change process

Step Four: Implement the Enhanced Business Process Solution and Make Further Process Improvements as Needed

- Conduct a pilot test, system test, or simulation
- Measure and revise the pilot-tested process
- Implement the business process
- Manage reactions to change
- Capitalize on success and make ongoing further process improvements

Step One: Establish an Appropriate Foundation

Like any other important undertaking, successful BPE in a court often depends more on basic strategy than on specific tactical decisions. When experts have identified the key ingredients for successful BPE, they have emphasized the critical importance of such fundamentals as leadership, a bold vision, having an organization that is ready for change, and having a capable project team to undertake the enhancement effort. It is therefore of utmost importance that court leaders preparing for a BPE effort ensure that it is well-grounded. Key to that effort will be the steering committee structure described here.

A. Develop an Appropriate Governance and Management Structure

Any court BPE effort must be organized and managed so that everyone knows its objectives, what functions specific people must perform, and when activities are to be completed. It is

therefore important to develop an effective management structure for the undertaking. Those overseeing the effort must determine its scope, define expectations, determine what resources will be needed (especially in people and IT), and how the project team will go about its work (see section "E" on page 9).

Leadership is vital to the success of any court improvement effort, and it is particularly vital to success in a BPE effort.[7] To support and oversee the BPE effort from start to finish, the project should have a **steering committee**, headed by the chief or presiding judge or other **executive sponsor**. The executive sponsor has decisionmaking authority within the organization, accepts accountability for the project, and has the authority to sanction the project and make it a priority. The steering committee should also include the court administrator, the clerk of court, and possibly other appropriate supervisors from the court who have major responsibility for aspects of the process under scrutiny.

B. Align Business Objective Priorities to the Court's Strategic Mission and Goals

BPE involves changing the way a court's daily work is done so it supports the purposes of the court in a more effective and efficient manner. In order to support a determination of whether its business processes have indeed been "enhanced," the steering committee should undertake process improvement or process reengineering with an eye toward the mission and goals of the court and the needs of the people who come to court. The main purpose of a court is to provide services to citizens who come to court. Only after steering committee members have thought carefully about *what* the court and its staff members should be doing in their work processes can they consider *how* to carry out those processes in the most effective and efficient way.

C. Assess Organizational Readiness and Decide on a Process Enhancement Approach

Before undertaking process enhancement, the court needs to understand what skills and resources may be needed for success and the possible changes in internal organization and local court culture that may be associated with such enhancement. The introduction of new IT often creates a situation in which process reengineering is highly desirable, particularly (as may be the case with many business processes in courts) if the new technology will affect processes spanning a number of separate offices, the exchange of critical data and information, and substantial interaction with attorneys and parties.

As the National Association for Court Management's Professional Development Advisory Committee has observed about IT in the courts, simply automating preexisting court business processes will not necessarily eliminate problems or bring about any noticeable

[7] Michael Hammer and Steven Stanton, *The Reengineering Revolution: A Handbook* (New York: HarperBusiness, 1995). Hereafter, Hammer and Stanton.

improvements in productivity.[8] Indeed, the introduction of computers may simply add more layers of cost, complexity, and delay. In particular, process reengineering may be critically necessary in order for the court to take advantage of the potential of IT in such areas as:

- Reducing redundant data entry.
- Gathering and sharing case-related data and information.
- Expediting access to case information and data for judges, court staff, attorneys, and other institutional participants in the courts' day-to-day activities.

Even if it is clear that a key business process needs to be changed, it is important to assess organizational readiness for the kind of change that would be involved in a process enhancement effort. Is the chief judge or his/her designee authorized and prepared to drive the process? Are judges and staff amenable to committing the time and effort that will be required to document the process and analyze the results? Are staff and judges willing to run parallel business processes during the testing phase? After such an assessment, the steering committee may decide that it is not prudent at the present time to proceed with efforts to change one or more processes because the court and its environment are not ready for what would have to be done for there to be a reasonable chance for success.

[8] National Association for Court Management, Professional Development Advisory Committee, "Information Technology Management Curriculum Guidelines," *The Court Manager* (Vol. 16, No. 4, 2002).

D. Begin to Manage Expectations and Build Support for Change

The steering committee should begin an early effort to build support for process enhancement within the court and among court users and stakeholders. The chief or presiding judge of a court is well positioned to explain the court's situation and goals, both internally and externally, and to determine appropriate criteria for success. The sustained and conspicuous involvement of the judges sends a strong signal to both the court community and the broader community that the court is serious about improving its performance.

Within the court, start involving key judges as well as supervisors and staff members in the process enhancement effort as soon as possible. Begin to think about how to manage the change process. Among external court users and stakeholders, work to develop consensus in support of the level of changes that will be needed to achieve the court's strategic objectives.

To help prepare for potential change, reach out early to court users and stakeholders and involve them where possible in the change effort. Ongoing communication about the goals and progress of the effort is crucial, since negative early perceptions might create a "self-fulfilling prophecy" and undermine chances for success. **Change management** needs to be well under way before the new process is implemented; otherwise, it will be difficult to build and sustain support and momentum among court staff members for the new process.

E. Appoint a Project Owner, a Project Manager, and a Capable Project Team

Beyond leadership, an appropriate vision, and organizational readiness for change, the success of the BPE effort will turn on the quality of the steering committee's strategic decisions about ownership of the new business processes and the quality of the team that will address the details of business process change. From the beginning, it is important for the steering committee to identify the person who will ultimately be responsible for managing the performance of the newly improved or reengineered process, and to designate him or her as its "owner." Doing so early in the process will fix accountability and responsibility for the process in one person. This person may be someone who is currently associated with the existing process to be enhanced, but this is not absolutely necessary. It is critical for the "process owner" to have the appropriate authority to develop and implement change and be able to work closely with the **project team**, or even lead it.

A project team working under the supervision of the steering committee should address the details of the actual BPE effort. The steering committee may appoint a project manager to be responsible for liaison between the steering committee and the project team, for working with the project team to resolve policy issues, and for keeping the project on schedule and within budget. It is important for the project team to accomplish the objectives of the process enhancement effort. Therefore, it is important that the steering committee pay particular attention to the makeup of the project team members, the resources and training available to the team, and the amount of time they are able to commit to the process enhancement effort. Incremental process improvement efforts may be accomplished with just part-time involvement of appropriate staff members. To give due consideration to the more significant changes that are likely to come from process reengineering, however, the committee should consider reallocating work assignments for at least some project team members, so they can give full-time attention to the process enhancement effort for an appropriate period of time.

The steering committee or the project manager, or both, should work with the project team to develop written guidelines for the team. The project manager and the project team should prepare a draft **project plan** for approval by the steering committee. The project plan should define the *activities, deliverables, and timeframes* for the effort, and it should serve as a *reference point* for managing the activities and progress of the project team. While the project plan should be clear and specific enough to provide a clear basis for shared understanding about the project between the steering committee and the project team, it should not be inflexible. The project team members should be able to direct their own work and be able to adapt the plan to unanticipated problems or opportunities.

F. Determine the Role of Consultants

Lastly, the steering committee should determine whether and to what extent the court should seek consultant assistance in the process enhancement effort.

Consultants can help a BPE effort by bringing specialized knowledge, skills, and experience. One of the ways they can help is by providing general education for the steering committee about process enhancement, and more detailed education and training for the project team in the *methodology, tools, and techniques* for either process improvement or process reengineering. It is critical, however, that ownership of the process enhancement effort remains in the court; that the steering committee maintains effective direction and oversight; and that the project team actually carries out the enhancement effort. In addition, it is important that consultants know how courts function generally and are knowledgeable about court best practices. The decision to engage consultants in addition to or in lieu of court staff requires that the court balance issues of cost, objectivity, and ownership of the effort. Consultants can bring knowledge of other courts' experiences; access to essential skills, including use of process enhancement tools and techniques;[9] and outsider objectivity. The downside may be that the consultants were hired due to a failure to develop important capabilities internally. The risk of diffusing accountability and significant cost increases are also issues that must be addressed. On the other hand, relying solely on existing staff members who understand current processes and the court's culture and environment may be more economically feasible and more likely to succeed following project completion. The downside of this solution might be that existing staff may lack the requisite knowledge and skills, may lack necessary objectivity, and may be constrained by self-interest or local political conditions.[10]

Step Two: Measure "As Is" Versus "To Be" Gap and Develop Feasible Alternatives to Existing Court Business Processes

Prior to undertaking a BPE effort, the court should have defined its vision, goals, and objectives in a **strategic plan**[11] and articulated the business problems to be addressed by the proposed project in a **business case**.[12] For example, the court may have decided to streamline its operational processes to increase the quality and accuracy of information, to improve the quality of decisionmaking, and to ultimately increase public safety. The business case may have identified specific and dramatic anecdotes regarding the limitations of the current justice system to, for example, provide warrant information or domestic violence order information to the sheriff or other law enforcement officer who had contact with the subject in the interim.

[9] See Chapter III.

[10] Warren Bennis and Michael Mische, *The 21st Century Organization: Reinventing Through Reengineering* (San Francisco: Jossey-Bass Publishers, 1995) pp. 96-99 [Hereafter, Bennis and Mische]; *see also* Hammer and Stanton, p. 78.

[11] John Martin and Brenda Wagenknecht-Ivey, *Strategic Planning in the Courts: An Implementation Guide* (Denver, CO: Center for Policy Studies, 1995).

[12] Nancy Maluso, "The Business Case — Friend or Foe?" http://www.prosci.com/bus1.htm; and "The Business Case — The Essential Elements," http://www.prosci.com/bus2.htm, (BPR OnLine Learning Center, 2001).

With increasing frequency, however, the business driver has been a budget cut resulting from State and local governmental budget deficits — with smaller reductions generating efforts to streamline existing processes, and massive cuts resulting in calls for completely new ways of doing the court's business at substantially reduced costs. Regardless of the business purpose, changing the business processes in a court through either process improvement or process reengineering requires that the project team have a full understanding of the existing processes, including how current technology is used to accomplish the court's business objectives. The team's analysis of the current "as is" situation should include assessment of current performance in appropriate measures or indicators, as well as comparison with a desired "to be" state of affairs reflecting strategic goals and objectives.

Based on this assessment and comparison, the court then develops **alternative solutions** that might permit the court to achieve more of its goals and objectives. There may be barriers to implementing alternative processes, and the court will need to determine how these barriers might best be overcome. Costs and benefits of each alternative need to be defined, both in comparison to each other as well as to the "as is" processes.

A. Document and Analyze the Current "As Is" Processes

The project team's first step is to define and categorize each business process into subprocesses and activities and to document the "who, what, when, where, and why" of each process. For example, the process of Filing a Complaint includes the *subprocess detail* of who, what, and when (the counter clerk opens the mail and time-stamps the document), whereas the *activity level of detail* describes who, what, when, and how much (the counter clerk opens all morning mail by 8:30 a.m., time-stamps the document, opens a new folder, scans the document and prints address and file labels, and passes all new folders to Records within 30 minutes). Project team members then draw diagrams of each process, subprocess and activity, with each participant identified separately. **Process documentation** may be conducted manually, for relatively uncomplicated projects using block diagrams or simple workflow charts, or with the assistance of automated documentation or modeling tools.[13] Each

[13] In Davidson County (Nashville), Tennessee, the Criminal Justice Information System operational project teams (comprised of vendors, Justice Information System (JIS) staff, and justice agency staff) electronically documented all "as is" business processes in the local justice system using Popkin's System Architect case/process-modeling tool. The teams used the IDEF ("integration definition": a group of modeling methods that can be used to describe operations in an enterprise) component of the tool to generate graphical representations and consistent interpretations of the business processes and enhanced communication between the technicians and JIS users. To develop the enterprise model, the project teams documented interagency process flows, and collected and analyzed all existing paper forms to determine the information exchange points. The "as is" model was subsequently compared to the "to be" model in order to define functional requirements. This detailed analysis enabled the teams to design the future integrated system; identify how each agency fit into the overall "big picture"; determine which parts of the system would be automated and which would remain manual; identify the processes that would be modified and their resulting effect on the organizational resources; and gain a better understanding of

process description will also identify how existing technology is used to augment the process. Subsequently, the project team will analyze the process to identify existing or potential bottlenecks or barriers in the process to begin to identify opportunities for improvement.

B. Benchmark and Set Enhancement Goals; Conduct Gap Analysis

The next step is to develop the "to be" business model, comparing existing system results to the court's **strategic goals**. Strategic goals are based on the level of production and service reasonably expected by the court's internal and external customers, and by how other successful courts perform those functions. Existing processes may then be compared to proposed processes to identify where and how they can be streamlined to more effectively achieve the court's desired results. The project team needs to focus its attention on changing those business processes most in need of change, on setting realistic enhancement goals, and on deciding whether process improvement or process reengineering is more suitable.

Through **benchmarking**, the steering committee can set ambitious but achievable performance goals based on what other courts have done. Benchmarking may be conducted either internally (compared to other divisions within the court) or externally (compared to other courts). For example, a criminal division process identified as problematic may be handled better in the civil division. Or a court with an individual calendar case assignment system might study the individual calendar system used in another court to see how that court achieves better results, e.g., lower caseloads, faster average time to disposition, etc.

Assess Technology. As part of the benchmarking process, the team should assess the status, capabilities, effectiveness, and orientation of the court's IT in relation to the court's strategic goals.[14] In determining priorities and the court's capacity to transform itself with the support of technology, ascertain whether technology can help to provide solutions in a cost-effective and timely manner. It is important to understand the extent to which business processes in the court may have to change in order to optimize the potential of IT. This Guide previously emphasized that many existing court business processes may have been developed decades before the availability of today's IT. During the process of benchmarking, the court should thus be sensitive to the scope of change that may be necessary in order to fully leverage the value of IT.

Conduct Gap Analysis and Establish Ambitious Performance Improvement Goals. Using the requirements of stakeholders and of internal and external customers, the project team should identify and assess the **performance gaps** between the results the court now achieves and the results customers and stakeholders can reasonably expect. Then the team should make recommendations to the steering committee on goals to achieve by closing the gaps. These goals should be linked to the court's mission.

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how each agency's processes impacted the overall justice system.

[14] Bennis and Mische, pp. 61-62.

Goal setting should be approached with care. Improvement goals should be realistic and achievable, so the process enhancement effort will not be doomed to failure from the outset. At the same time, however, the goals should be ambitious enough so the court will have achieved substantially better service if it meets or nearly achieves those goals.

C. Develop Alternative Process Solutions

Next, compare the gap between the current "as is" process and the desired "to be" situation. Based on this gap analysis, the team should begin to develop new alternative processes that are both practical and innovative. If the gap is not great, then process improvement methods may be suitable to bridge the gap and define alternative solutions. If the gap is significant, however, then it may be necessary to develop and consider alternative solutions that would involve more dramatic process reengineering steps.

During the early 1990s the Domestic Relations Division of the Maricopa County (AZ) Superior Court tried two alternative solutions to the problem of increasing delays, which demonstrate the difference between solutions requiring business process review versus reengineering:

- **The business process review solution**: Following research, analysis, and discussions designed to identify the shortcomings of the existing process, the first alternative solution implemented was the replacement of the current system of clerks providing non-legal advice at the counter (as is) with a divorce guide (to be) to help unrepresented litigants navigate their way through the process. Implementation of that solution had limited impact on existing operations, which were revised through a review of existing business processes. Unfortunately, it did not result in reduced delays and, in fact, highlighted the need to provide litigants with better access to legal services.

- **The reengineering solution:** Subsequently, the court identified another alternative — the development of a fully staffed library and resource center able to help litigants address the full range of divorce-related issues, including providing a way to integrate the bar in the process to provide litigants with legal advice on limited aspects of a case (unbundled services). The gap between existing services and the "self-service center" vision, integrating the bar, redefining the role of the court and court staff, and developing self-help manuals and facilities, etc., required complete reengineering of the processes for providing litigant assistance and for referring litigants to the bar association, as well as engineering the development of a virtually new court function. The next phase of business process review in Maricopa County will involve an assessment of how automation can help streamline the self-service center processes to better enable the court to achieve its business objectives.

Whether alternatives are compared to each other or developed serially, the court needs to evaluate the risks, costs, and benefits of each, including not only new work processes, but also the broader changes to the court's operations and systems that would be necessary to put a new alternative into effect.

For each alternative, the team should prepare a detailed process flowchart, noting any interfaces and dependencies with other processes, as well as written answers to key questions, such as:

- How can IT best support each proposed process?
- How will we know if the project is successful (what measures compared to what court goals)?
- How might the proposed processes impact the organizational structure of the court, staffing, and facility requirements?
- What changes might be needed in statutes, policies, and procedures of the court or other organizations?[15]

The project team should then review the documentation of the alternatives with the "process owner" and other court staff members who will be affected by changes. This not only helps to promote buy-in, but it also helps determine if anything has been overlooked, find flowchart steps that should be changed, and discover what might not be practicable.

D. Identify and Assess Potential Implementation Barriers

The team also needs to identify *potential barriers* to implementing alternative business processes in the court. In a process improvement effort, these barriers may be "hard" or "soft,"[16] modest or substantial. "Hard" barriers are items, structures, and laws that may need to be addressed, including resources, legal issues, organizational structures, and IT. "Soft" barriers refer to people-related problems, including internal and external individual and group resistance. Modest barriers might include the need to arrange for staff training, revise policy and procedures manuals, develop new forms, etc. Substantial barriers could include the need for a fundamental change in the local legal culture (such as the court taking control over case scheduling in a jurisdiction where it has been traditionally controlled by the bar); political issues; changes in skills required for the new process; union issues; as well as changes in statutes, rules, court administrative policies, and funding scenarios. The magnitude of these barriers and the cost of addressing them need to be assessed and included in a cost/benefit analysis to be done as part of building the business case for implementing the desired new process. (See Step Three, page 16.)

E. Analyze Cost/Benefit Alternatives

For each alternative process solution, the project team should complete a

[15] Richard Chang, *Process Reengineering in Action: A Practical Guide to Achieving Breakthrough Results* (San Francisco: Jossey-Bass/Pfeiffer, 1996) pp. 52, 58.

[16] Wolf Schumacher, "Managing Barriers to Business Reengineering," Chapter 3 (BPR Online Learning Center) http://www.prosci.com/w_3.htm.

cost/benefit analysis.[17] Cost/benefit analysis is a technique to compare the various costs associated with an investment, activity, or program with the benefits that it proposes to return. In its simplest form, cost/benefit analysis is carried out using only financial (tangible) considerations, for example, the cost to acquire and install new software to enable the public to pay traffic tickets at automated teller machines versus the additional amount of revenue generated as a result of implementing the new program. A more sophisticated cost/benefit analysis of the same project could include the less tangible costs of marketing the new service to the public; the time and effort involved in training bank liaison and staff; and the less easily quantified benefits of increased compliance with traffic laws, such as improved traffic safety.

The cost/benefit comparison need not be exhaustive or unduly time-consuming. One approach would be to call other courts or vendors to obtain informal cost estimates to develop a quick understanding of potential cost differences among the various alternatives. Courts should be cautious about assuming (or about assuring funding agencies) that expected project efficiencies will necessarily translate into overall cost savings to the organization. Keep in mind that most courts have other, understaffed functions to which underutilized resources can always be reallocated. It is also important to recognize that qualitative benefits may not always be as easily documented as quantitative costs. For example, when assessing the introduction of new IT to improve the administration of justice,[18] the costs of system acquisition may be easier to quantify than the benefits of increased public safety or the improved quality of decisionmaking.

Cost/benefit analyses should also include the estimated costs of dealing with potential barriers to implementation and should consider the economic, operational, and technological risks. In the *risk analysis* component of the assessment process, the team evaluates both quantitative (financial and staff resources) and qualitative (judicial leadership support) risks. The greater the likelihood a factor will put the project at risk, the greater the need to mitigate that risk and to have a contingency plan in place in the event of failure.[19]

Step Three: Choose the Desired Solution and Plan for its Implementation

Having developed and analyzed one or more alternatives to the current "as is" process in the court, the steering committee must then select which BPE solution to implement and prepare an

[17] Mind Tools, "Cost/Benefit Analysis: Evaluating Quantitatively Whether to Follow a Course of Action," http://www.mindtools.com/pages/article/newTED_08.htm.

[18] *See* New Venture Tools, "Technology Evaluation, Cost Benefit Analysis Components," for recommended steps for evaluating any business process enhancement solution, http://www.newventuretools.net/toolbox?toolwindow=cba/index.html.

[19] Tennessee Department of Finance and Administration, Office of Information Resources, "Cost Benefit Analysis Methodology," http://www.state.tn.us/finance/oir/prd/cbaguide.pdf.

implementation plan, including timeframes, milestones, decision points, resource allocation arrangements, and change management strategies.

A. Choose the Best Alternative

For recommended adoption by the steering committee, the project team should select a process alternative that is best at accomplishing the strategic mission and goals of the court, meeting the needs of internal and external customers, overcoming barriers to change, and yielding benefits that will justify court expenditures. If the project team has done a good analysis of the alternative process solutions available to the court, then the team's presentation of its conclusions and recommendations should provide the steering committee with a sound basis for choosing the most desirable solution.

It is important that in choosing an alternative, the steering committee take into consideration the context and impact of its decision. A decision to improve an existing process will ordinarily have far less impact on the court's budget, culture, and operations than a decision to reengineer that function. If the appropriate choice is a process improvement step that will have modest impact within or outside the court or a unit of the court, that will be very different from a process reengineering decision that may yield valuable positive results but which will have cost consequences and may substantially affect other institutional participants in the day-to-day operations of the court. (In the court security example cited in Chapter I, installing a metal detector at the courthouse entrance would obviously have far less impact on the court and litigants than implementation of the virtual courthouse concept.)

Once the court has chosen the alternative that offers the best balance between costs and benefits, with attention to potential barriers and risks, the steering committee should articulate a rationale for the decision — why the particular alternative was chosen. This will:

- Help to rally the support that will be needed to put the decision into effect.
- Show others what issues are important to the court.
- Demonstrate that the decision was reasonable.
- Avoid active opposition by giving reasons to support the decision.
- Help sell the desired solution by articulating the benefits to the court.

B. Make the Case for the Desired Solution

Having chosen the most desirable alternative process solution, the steering committee, with the assistance of the project team, must next lay the groundwork for more detailed efforts. This means looking more closely at what will be needed to support the new or improved process, in terms of people, IT, and finances, and then making the business case for the support that will be needed for the new or improved process.

It is critical to consider the human element in BPE, since judges and other employees of the court and the clerk's office carry out most of the activities in court business processes. Process improvement or process reengineering

may well involve redesigning the way that court staff members do part of their work, or eliminate steps, and it might even completely change how they do their jobs. Part of developing an enhanced business process is to discover how it would change the work people do. For example, court finance personnel may be required to learn how to use new financial management software. Even more dramatic would be the creation of a new family division that brings together domestic staff members and juvenile staff members who formerly worked in separate units, or the creation of a single "criminal" division in a clerk's office, where there were formerly separate misdemeanor and felony units.

The team should review any technology acquisitions needed to support the new or improved business process. Today's technology has enormous potential to help courts manage cases, control work, manage finances, communicate, and provide concurrent access to case information, among other important support tasks. It can involve sophisticated computer systems, audio or video technology, or even something as basic as improved telephone communications and fax machines. While technology is an important tool to support process improvement or reengineering, it is not a "magic bullet," and the entire notion of process enhancement is premised on recognizing that successful process change will require much more than just new technology. Decide how critical technology is for enhancement of the process under study, and choose the kind of technology that is most appropriate.

While acquisition and implementation of new, off-the-shelf case management software will automate existing court processes, it will inevitably require changes in how cases were processed previously, and will require modification of the software to meet the unique legal, procedural, and operational requirements of the court. New metal detector equipment or information system access codes designed to provide better physical or data security will require changes in court operations and may require modifications in the responsibilities and, therefore, the position descriptions and job qualifications of court security and IT staff.

Summarize the business need, the proposed solution and all affected people, technology, and financial implications in a "business case" that justifies the hard and soft costs of the project in terms of quantifiable benefits (return on investment).[20] The business case can then be used to provide sufficient information on which the court, funding authorities, and other critical actors can decide whether to go forward with the chosen approach to process enhancement.

C. Develop the Details of the Desired Solution

Once the concept for the enhanced business process has gained sufficient financial and organizational support, the project team should begin detailed design of the new or improved process. This will require:

- Development of a "to be" *system workflow*.
- Definition of the *operational responsibilities* of individual

[20] See note 12, "The Business Case — The Essential Elements."

court staff members and/or detailed specification of *user requirements* for automated systems.

- Commencement of *system development* for automated applications.
- *Expansion of the project team* to include those court staff members who will actually carry out the enhanced business process concept in the development of system details.

The same modeling tools used to document the "as is" process[21] may be used to develop the required level of detailed description of the improved or reengineered process.

Once the **detailed workflow** under the new or improved process has been completed, the project team will begin to define **system requirements**. System requirements should include:

- Documentation of existing systems and processes.
- Assessment of the existing system's limitations toward meeting the court's business needs.
- Anticipated workload changes.
- Assessment of life cycle of existing systems and of compatibility of existing processes, hardware, and software with proposed processes and or systems.[22]
- Assessment of records processing, storage, and retrieval systems.
- Judicial and nonjudicial staff training requirements.
- Other relevant factors, including security, emergency planning and disaster recovery, Americans with Disabilities Act compliance, facilities impacts, workforce issues, etc.[23]

Next, quantify performance measures to enable the court, funding agencies, and the public to evaluate project success.[24]

Finally, initiate system development of automated applications to support and implement the new or improved business process. The court first needs to decide whether to "build or buy," a decision dictated largely by the availability of in-house resources and expertise. If the decision is to buy, the court needs to develop a **procurement plan** to include:

1. Whether it will use a Request for Proposal (RFP), Request for Information (RFI), Request for

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[21] See note 13.

[22] For court case management projects, compare existing requirements to court case management standards for civil, criminal, domestic relations, juvenile, and court filing XML functions developed by the National Consortium for Court Case Management Automation Functional Standards: http://www.ncsconline.org/D_Tech/Standards/Standards.htm.

[23] U.S. Government Services Agency, Information Resources Management Service, *Guide for Requirements Analysis and Analysis of Alternatives* (1998), http://www.law.uh.edu/cdrom/USGMP_oct98/zdata/itpubs/raaa.pdf.

[24] National Association for Court Management, Comprehensive Public Information Programs Subcommittee, *Holding Courts Accountable: Counting What Counts Guide* (Williamsburg, VA: National Center for State Courts, 1999); and American Bar Association, *Trial Court Performance Standards* (1990).

Qualifications (RFQ), Invitation to Bid (ITB) or sole source procurement process.[25]

2. Project functional specifications.
3. Bid evaluations criteria and methodology.

This is a critical stage in any technology project and courts should consult with procurement experts at their jurisdictional level for guidance.[26]

D. Develop a Plan to Manage Implementation

The next step is to develop a detailed **implementation plan** that provides a "roadmap" for the introduction of the new or improved business process. If only minor incremental changes are needed to make the current "as is" business process more efficient and effective, then this plan can be relatively simple.

It is especially important that the executive sponsor — the chief or presiding judge — as well as other steering committee members champion the improvement or reengineering effort and provide highly visible leadership and encouragement as planning is being done for implementation of the new or improved business process. Court leaders must clearly demonstrate their personal commitment to the successful implementation of the BPE effort.

Risks and potential barriers associated with alternative approaches to BPE identified during the risk assessment phase of the cost/benefit analysis (described earlier in this chapter) may materialize during the implementation of the desired business process solution. For those most likely to occur, and for all that would cripple implementation, the project team will need to plan for how to continue operations in the affected areas.

Implementation planning requires:

- Identification of all tasks to be done, including time frames, milestones, and deliverable dates.
- Assignment of staff responsibilities for each task, training requirements, and identification of key staff successors.
- Establishment of performance measures and determination of data to be collected to evaluate programs.
- Establishment of a problem resolution process.
- A progress reporting methodology and process.

A key consideration will be whether to pilot test the solution, conduct parallel operations, and/or conduct computerized simulations of the new processes to identify and resolve potential problems. For example, between 1994 and 1996,

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[25] Kelly Harris and William Romesburg, *Law Enforcement Technology: How to plan, purchase and manage technology (successfully!)* (Washington, DC: Office of Community Oriented Policing Services, U.S. Department of Justice, pp. 176-179) http://www.search.org/leit/default.asp.

[26] *See* www.itpba.com/#mission, the site of the Information Technology Procurement Benchmarking Association; *see also* www.search.org/it-clearinghouse, the SEARCH database of justice agency procurement documents to use as models, including the model RFP developed by the COSCA/NACM Joint Technology Committee, http://www.search.org/courts/modelrfp/intro.htm.

the Beaverton (OR) Municipal Court's use of simulation software in the design of a new traffic citation processing system enabled the court to plan its migration from a paper-based to a "paperless" court, facilitate communication regarding the new concepts within and outside the court, provide financial justification for the project, and plan staffing for revised operational procedures.[27]

E. Plan to Manage the Change Process

Especially for the introduction of significant changes in a process reengineering effort, the human element — resistance to change based on elements of the local legal culture — is likely to be a major challenge facing the implementation of a different business process. As indicated earlier in this Guide, the steering committee and project team should begin early in their efforts to overcome potential barriers and build support for process enhancement, both within the court itself and externally among court users and stakeholders.

Change management needs to be well underway as the new or improved business process is about to be implemented, because it will otherwise be difficult to build and sustain support and momentum among judges, court staff members, and representatives of court-related organizations for the enhanced process. As part of planning for implementation, the court should develop an explicit change management strategy.

The chief judge and the members of the steering committee, with information and suggestions from the project team, should consider the ways that judges and other key participants and stakeholders in the day-to-day operations of the court may be affected by the planned implementation. Some people will always oppose any change, and the court must deal appropriately with them. The majority of people are likely to be either enthusiastic about or open to considering the proposed changes. The court should take steps to address their concerns and ensure that they perceive the enhancement effort as proceeding in a reasonable fashion. Those who are clear and active supporters can serve to ensure that there is a solid base of support for the enhancement effort as it goes forward.

The steering committee and project team should prepare a **change management strategy plan** addressing personnel issues (impacts on existing staff); information technology (align IT organization to support new operational structure); education and training requirements; and communications. In preparing the plan, the steering committee and project team should draw upon support resources, including outside consultants, governmental agencies, professional associations, and court management sources such as the National Center for State Courts.[28]

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[27] John Petrakis and Michael Engiles, "Creating a Paperless Municipal Court," in *Proceedings of the 2000 Winter Simulation Conference*, http://www.informs-cs.org/wsc00papers/278.PDF.

[28] Sharon Caudle, *Reengineering for Results: Keys to Success from Government Experience*, Section 6, "Practice Change Management and Provide Central Support," Electronic College of Process Innovation (Washington, DC: National

The change management strategy should include a plan for rolling out the process review project to the court and other justice agencies and individuals, including the proposed implementation and schedule, training activities, any organizational and staffing changes, and how project progress and success will be measured and reported.

Step Four: Implement the Enhanced Business Process Solution and Make Further Process Improvements as Needed

The next step in the process is implementation. As discussed in Step Three, the court will have already determined if the new system will be pilot tested, implemented in parallel, implemented without testing, or simulated. Business process tools used to develop the "to be" solution may continue to be used during the pilot system testing or simulation phases of implementation.

A. Conduct a Pilot Test, System Test, or Simulation

Unless the court has decided to implement without testing, it is now time to conduct testing — whether by a pilot project or by system testing — prior to full implementation. Pilot or system testing are particularly effective ways to see how a proposed business process change will operate "in the real world," and these efforts will provide critical information about any weaknesses or unforeseen problems in the court's process design or implementation plan. For example, the Criminal Justice Information System (CJIS) team in Davidson County (Nashville), Tennessee, used the Integration Definition (IDEF) tool initially to document "as is" and "to be" aspects of the new process design; the team then used test scripts to assess the capability of the new system to meet user requirements:

Academy of Public Administration, 1994) www.c3i.osd.mil/bpr/bprcd/3002s6.htm.

System Testing in Davidson County, Tennessee

In 1992, the justice officials in Davidson County, Tennessee, decided to formally work together to automate and integrate the justice agencies with the County.[29] In order to accomplish this goal, a unique, cooperative organization, the Justice Information System (JIS) agency, was created under authorization from a metropolitan government ordinance. The system was designed using the IDEF tool,[30] and the system design was then assessed through the use of test scripts. The team felt it was important to the future success of the project that the project team assume ownership of responsibility for system testing rather than rely on the system design vendors to conduct system testing.

Because all parts of the JIS were to be integrated, end-to-end tests had to be designed. Profiles of fake individuals were created in the Police Department mainframe, and the testing started at the booking process where the team checked whether demographic information would come through the interface between the mainframe and CJIS. Next, the test information was processed through the General Sessions court module; some cases were disposed of in the lower court, and others through the grand jury. If the cases were disposed of in the lower court, the test team verified that the disposition information was transferred to the Police mainframe and the Sheriff Office Jail Management System (JMS).

During the grand jury testing, charges were changed and added, defendants were added, and grand jury reports were generated. At this point, the testing proceeded to the State Trial Court module for motions, trials, and dispositions and was finally completed when the outputs from the court processing were electronically transferred to the Police mainframe and the JMS. These end-to-end tests allowed users to verify that information was flowing correctly from the initial booking process, into the grand jury and court systems, and back into the police criminal history records**.**

Davidson County subsequently developed the capability to run test scripts through an automated testing tool. This tool speeds up the testing process while providing an objective statistic on response time for "before" and "after" results. System testing is an ongoing responsibility. The system must be retested after each new build or upgrade. It is inevitable that something that worked before an upgrade will be damaged after the enhancement or replacement. Locating the ripple-effect errors *before* an upgrade is rolled out to the user community will save time and trouble. Agencies should maintain records of their tests; doing so will result in cost savings. Accurate records will assist an agency's case if the agency needs to show the vendor that a particular part of the delivered system worked the last time the test scripts were run, and the current problem was created by the vendor's most recent upgrade.

CJIS staff recognized that testing would be a difficult and time-consuming process. Yet they expected that it would pay dividends. They reasoned that the more time and imagination spent in this activity, the better their system would perform. The agencies in the CJIS project that spent the most time in designing test scripts and testing now have the fewest problems.

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[29] Teri B. Sullivan and Michaela Mathews, "Davidson County Integrated Justice Information System," *Case Study* series (Sacramento: SEARCH Group, Inc., 2002): http://www.search.org/integration/about_integration.asp#publications. Hereafter, Sullivan and Mathews.

[30] See note 13.

B. *Measure and Revise the Pilot-tested Process*

Based on the system test or pilot study, the team will coordinate further changes needed prior to final implementation.[31]

C. *Implement the Business Process*

Implementing the enhanced business process is an exercise in **project management**, which involves project start-up, management of project execution, and control of the project.[32] It also involves celebration of successes and dealing appropriately with failures.

Project management tasks include verifying project scope, providing for team development, assuring product quality, and arranging for timely distribution of information. The steering committee's oversight responsibilities include ongoing assessment of risk, quality assurance, and monitoring and management of time, cost, procurement, and performance.

It will be necessary during the implementation period to deal with problems as they arise, and to make any adjustments that may be necessary in work assignments and timetables. In order for the steering committee to exercise effective oversight, the team should establish a problem resolution mechanism.

Celebrate successes whenever possible. Use the accomplishment of milestones to mark progress, to help keep the team focused on the project goals, and to help build and maintain ongoing motivation, commitment, and support for the effort.

Acknowledge the planning, hard work, and effort that went into the success. Letting everyone know about early accomplishments can be particularly helpful as a means to promote enthusiasm and motivation in favor of the new or improved business process, and to help promote the value of the effort to those in the local legal community who may have had reservations about the changes reflected in the implementation effort.

D. *Manage Reactions to Change*

Your success in the full implementation of the new or improved process will depend in part on how much "buy-in" you have from judges, court staff members, and others affected by the implementation effort. Most BPE failure is directly attributable to failure to manage "the human dimension" of the changes that are presented during implementation. Some say that change is the single most difficult feature that people must face in an organization.[33]

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[31] U.S. Bureau of Reclamation, *Decision Process Guidebook: How To Get Things Done in Government*, "Step 9: Implement," http://www.usbr.gov/pmts/guide/step9.htm. Hereafter, USBR Guidebook.

[32] Kansas Department of Human Resources, Change and Transition Management Board, *Project Leadership Series*, "Tips for Successful Project Startup," http://www2.hr.state.ks.us/tips/html/startup.htm, and "Tips for Successful Project Execution," http://www2.hr.state.ks.us/tips/html/projectex.htm.

[33] Dealing with change in the workplace is not unlike the grieving process people go through in dealing with loss, from denial to resistance to exploration to acceptance. Kansas Department of

Carrying out the court's change management strategy requires open and honest communication throughout the transition period. Successful communications require the unambiguous support of the changes by the chief judge and other court leaders, even as they remain sensitive to the concerns of people affected by the changes, through each of the three stages of change:[34]

1. **Discontinue the old way of doing business**: Treat the past with respect; provide information over and over; "mark" the ending.
2. **Migration**: Encourage support group communications; protect your people.
3. **Starting the new way of doing business**: Be consistent; celebrate success.

E. Capitalize on Success and Make Further Process Improvements

If the implementation effort has been successful, make good use of it. Be sure to recognize all those whose planning, work, determination, and support contributed to the positive outcome. Be sure to let everyone — judges, court staff, representatives of court-related agencies, stakeholders, and members of the public — know what happened and why. The gains achieved by the enhancement effort process can erode unless the court continually monitors its performance and makes further refinements on an ongoing basis. Use performance information as a tool to aid continuous improvement of work processes.

Human Resources, Change and Transition Management Board, *Human Resource Leadership Series, Part III*, "Tips for Managing People Through Change," http://www2.hr.state.ks.us/tips/html/hrmgmt.htm.

[34] U.S. Department of Defense, *Business Process Reengineering (BPR) Fundamentals*, Chapter 7, "Business Process Reengineering and Organizational Change," The Electronic College of Process Innovation, www.defenselink.mil/c3i/bpr/bprcd/7223c7.htm.

Chapter III. Tools and Methodologies to Support Business Process Enhancement in the Court

The court's BPE steering committee and project team can apply the steps described in Chapter II to any business process in a court, regardless of its complexity. Especially with large and complex processes that have many details, the project team will be able to act much more quickly and efficiently with the aid of appropriate tools and methodologies. This chapter discusses some of the tools and methodologies commonly used in process improvement or process reengineering. Figure 3 shows those different tools and methodologies.

The project team should consider different factors before selecting any specific tool or methodology, including how a problem is defined or how significant or complex it is. In addition, there are different tools or methodologies for different kinds of tasks, such as information and data gathering, analyzing alternative solutions to problems, or evaluating costs and benefits. Most tools and methodologies are designed for a specific kind of activity, and each has strengths and weaknesses.

Some of the tools and methodologies discussed in this chapter had their genesis in the development of process improvement, while others are associated with systems engineering, information systems, and project management. This overlap reflects the fact that process improvement and process reengineering are on a continuum, and that any successful enhancement effort typically calls for people with varied knowledge, skills, and abilities.

Figure 3. Checklist of Tools and Methodologies to Support Business Process Enhancement in the Courts

A. Process Documentation Tools
- **Block Diagrams**
- **Process Flowcharts**

B. Process Analysis Techniques and Statistical Presentation Tools
- **Process Analysis Techniques**
  - Brainstorming
  - Focus Groups
  - Force-field Analysis
  - Nominal Group Technique
  - Workflow Analysis

- **Statistical Presentation Tools**
  - Affinity Diagrams
  - Fishbone Diagrams
  - Histograms
  - Pareto Analysis

C. Simple Project Planning and Management Tools
- **Action Plans**
- **Matrix Diagrams**
- **Tree Diagrams**

D. Advanced Project Planning and Management Tools
- **Critical Path Method, Gantt Charts, and PERT Charts**
- **Joint Application Development Teams**

E. Software Tools
- **Computer-based Collaborative Tools**
- **Software-supported Tools**
- **Vendor-neutral Modeling Tools**
- **Vendor-specific Workflow Systems and Software Tools**

F. Basic Methodologies Supporting Business Process Enhancement
- **Benchmarking**
- **Cost/Benefit Analysis**
- **Risk Analysis**

G. Advanced Methodologies Supporting Business Process Enhancement
- **Activity-based Costing**
- **Balanced Scorecard**
- **Capability Maturity Model**
- **Simulation**
- **Six Sigma**
- **Trial Court Performance Standards and Measurement System**

Process Documentation Tools

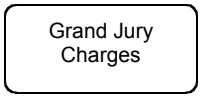
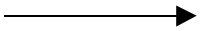
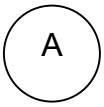
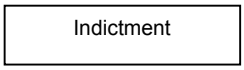
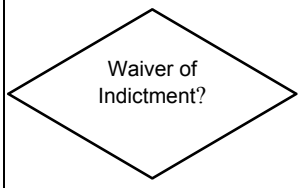
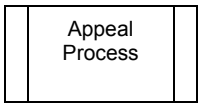
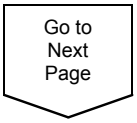
There are several documentation techniques that can be used to help understand and document a court's business processes. Two of them are **block diagrams** and **process flowcharts**.

Block diagrams. A block diagram is the simplest form of a flowchart. It provides a quick and uncomplicated view of a business process. Block diagrams are helpful to simplify large, complex processes, or to document individual tasks. Rectangles (to show activities) and arrows (to show information flow or relation between activities) are the primary symbols in a block diagram, and elongated circles can be used to show the start and end of a process. An example of a block diagram is shown in Figure 4. Block diagrams provide a quick overview of a process, not a detailed analysis. Normally, they are prepared first to document the magnitude of a business process. They are therefore most suitable for the court's steering committee to use as information for determining which business processes may be most in need of enhancement.

Process flowcharts. The project team can prepare a more detailed process flowchart, building on the block diagram of a process, to analyze that process in more detail. The preparation of a process flowchart that is more detailed than a block diagram provides the basis for defining and analyzing a court process — for example, in the creation of a case file in a clerk's office — by building a step-by-step picture of the process for analysis, discussion, or communication. A standard set of symbols is typically used in the creation of a flowchart.[35]

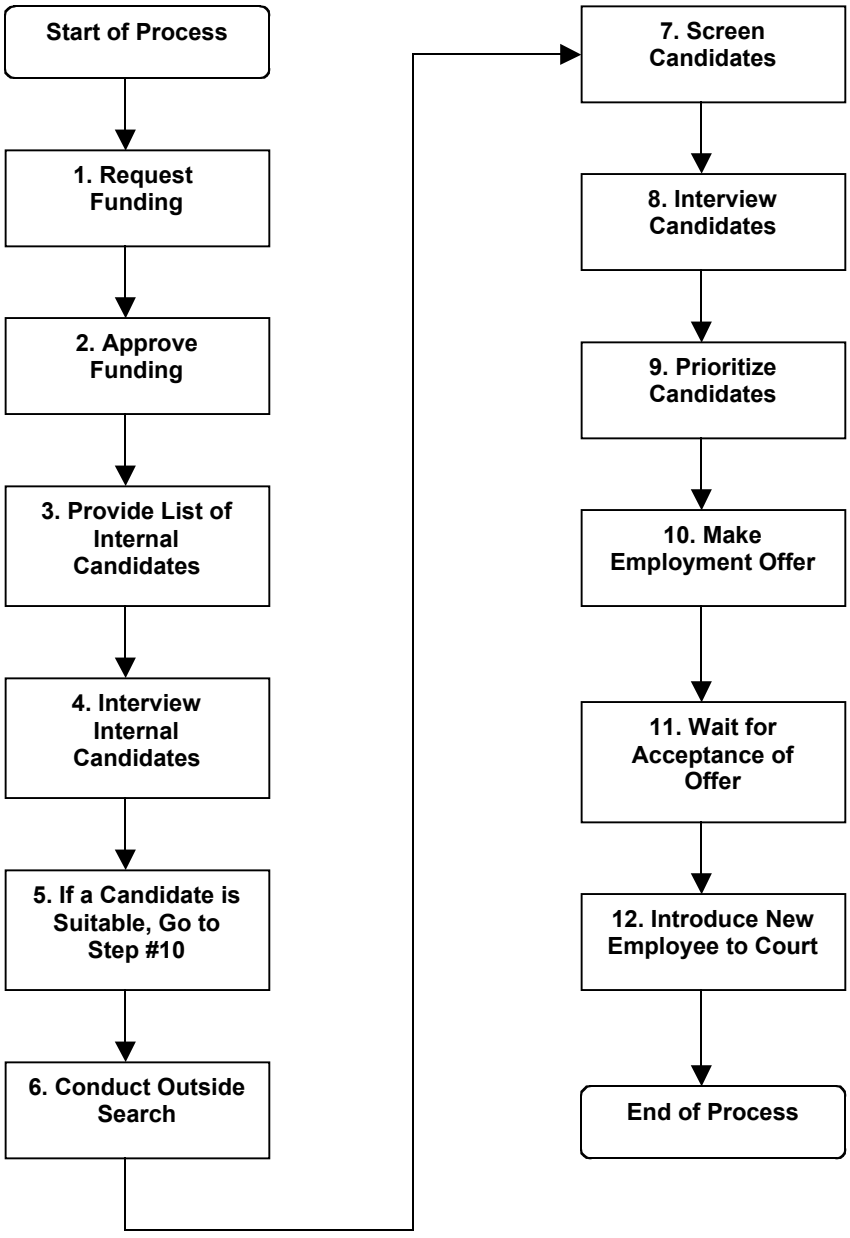
[35] U.S. District Court, Northern District of Oklahoma, "U.S. District Court Criminal Case Flowchart," http://www.oknd.uscourts.gov/publicweb/attorney.nsf/37ff90ded72952f386256b870077ef51/6cfe8cc15a9b9e1186256b9700592e83?OpenDocument. For more information on standard process flowchart symbols, *see* Harrington, pp. 95-98. *See also*, National Open School, Certificate in Computer Applications, "Lesson 25: Flowcharting," http://www.nos.org/htm/basic2.htm.

Figure 4. Standard Process Flowchart Symbols

Symbol	Name	What Symbol Indicates
	Elongated Circle	Shows the starting and ending points of a flowchart.
	Straight Arrow	Shows direction of process flow.
	Connector	A small circle with a letter is used to connect one task of a flowchart to another task in the flowchart.
	Box	Any workflow task. Each box should contain a short description of the task being performed.
	Diamond	Any decision point. Each diamond should contain a question for which there is a “yes” or “no” answer. (The process flow for a “yes” answer will go in a different direction than that for a “no” answer.)
	Rectangle with Parallel Lines	Used to identify a process that follows steps not directly relevant to this flowchart and not shown on this flowchart.
	Off-page Connector	Used to show that the process continues on the following page or is continued from the preceding page.

If a flowchart has been prepared thoroughly, the analysis of it can help the steering committee and project team understand and identify court process bottlenecks, including points of delay, waiting time, and queuing time. It can also aid the team’s identification of key “customers” — both internal (such as individual judges) and external (such as parties and citizens seeking court information) — at different points in each process. Flowcharting can also be useful to identify sources of error, waste, and “nonvalue-added” operations and to identify possible areas for change.

Figure 5. Block Diagram of Hiring Process in a Hypothetical Court[36]



[36] With minor modifications to represent a court setting rather than a private business, this example is based directly on one given by H. James Harrington in *Business Process Improvement,* p. 89 (see note 1).

Process Analysis Techniques and Statistical Presentation Tools

There are five general techniques one can employ to identify business process issues (brainstorming, focus groups, force-field analysis, nominal group (or Delphi) technique, and workflow analysis). A range of presentation tools is available to document quantitative and statistical data used to analyze the processes or issues identified (affinity diagrams, fishbone diagrams, histograms, and Pareto analysis). Each of these analytical techniques and statistical presentation tools is described below.

A. Analytical Techniques

Brainstorming. This is a planning technique used to determine possible causes or solutions to problems, or to decide which business process problems are most in need of attention. It can also be used to plan the steps in a project. It is a means to elicit the creativity of a group of people when it is desirable to generate a large number of ideas or to build consensus. Brainstorming relies on four principles:[37]

1. Take turns proposing one idea at a time, until the group runs out of ideas.
2. Do not criticize any other idea.
3. Build on any other idea.
4. Select criteria by which to evaluate all ideas to narrow down to top three ideas/solutions.

Focus groups. Focus groups are structured group interviews involving organized discussion with a selected group of persons to gain information about their views and experiences of a topic.[38] They are particularly suited to generate several perspectives about the same topic. The benefits of focus groups include gaining insights into people's shared understandings of everyday life, and the ways in which others influence individual persons in a group situation.

Focus group meetings provide an excellent opportunity to obtain feedback from internal and external customers about how well court staff or clerk's office staff provide services. Since the conduct of focus groups involves a disciplined methodology, it may be prudent for the steering committee or project team in a BPE effort to have a professional focus group facilitator, unless a member of the committee or team has had prior experience conducting focus groups.

Force-field analysis. This tool provides a way to identify factors that stand in the way of achieving a goal (restraining forces), as well as factors that will promote achievement of that goal (driving forces). This analysis can help the project team identify some of the causes and potential solutions to a business process problem. It also helps

[37] Richard Chang and Matthew Niedzwiecki, *Continuous Improvement Tools: A Practical Guide to Achieve Quality Results* (Irvine, CA: Richard Chang Associates, 1993) Vol. 1, pp. 5-11 [Hereafter, Chang and Niedzwiecki], and USBR Guidebook, "Brainstorming," http://www.usbr.gov/pmts/guide/toolbox/brainsto.htm.

[38] Anita Gibbs, "Focus Groups," *Social Science Update,* University of Surrey Department of Sociology, http://www.soc.surrey.ac.uk/sru/SRU19.html; see also *The Focus Group Kit,* edited by David Morgan and Richard Krueger (Thousand Oaks, CA: Sage Publications, 1997).

the team to focus on ways to develop a plan of action that will have a greater chance of success. Table 2 is a sample force-field diagram showing hypothetical driving forces and restraining forces in a court with a civil delay problem.

Table 2. Hypothetical Force-field Diagram for Trial Court with a Civil Delay Problem

Current Situation: Pending civil inventory is too large, with too many pending cases older than applicable time guidelines.	
Goal: Reduce size of pending inventory by 10% this year, and dispose of all open cases more than three years old, except those on appeal or pending completion of bankruptcy proceedings.	
Driving Forces	**Restraining Forces**
Judges are fair and dedicated	Priority of criminal and juvenile docket limits judge availability for civil docket
Hard-working court staff	Number of judges has not kept up with caseload growth
Key members of trial bar want improvement	Inadequate number of staff members in clerk's office
Court leadership from chief judge	Legacy computer system
Trial court administrator works well with judges and clerk of court	Falling revenues limit funding
Good support from State court administrator's office	Some insurance companies refuse to settle cases and instead demand trials in soft tissue/chiropractor cases
Chair of county board is a business person who understands the court's problems	Old and inadequate court facilities — not enough courtrooms
Newest judges on bench are progressive and want to try new approaches to court problems	Lack of effective communication within court
	Too many cases do not settle until the day of trial
	Calendar clerk is overworked

Nominal Group (or Delphi) Technique. This technique provides the project team with a participative process to identify problems and issues, or to develop potential solutions to previously identified problems. It is a method to generate, record, and prioritize ideas in order to reach consensus. It can be particularly useful to help resolve complex problems when a group is under time pressure, or to avoid potential conflicts associated with discussing and prioritizing sensitive issues.[39]

Workflow analysis. This is a structured approach to improving work processes by identifying and eliminating unnecessary tasks and streamlining the flow of work activities and tasks. The technique would call for the court to create cross-functional teams (comprised of persons from different departments and perspectives, to create an opportunity for exchange of fresh ideas) to analyze functions, activities, and tasks and to identify unnecessary steps. Johnson Edosomwan recommends that workflow analysis involve the following steps:[40]

Step 1:	Define the process purposes, objectives, starting points, and ending points.
Step 2:	Identify functions and major responsibilities of the court, including staffing and planning.
Step 3:	Identify business processes within each function.
Step 4:	Identify basic steps to perform each activity in a business process, thereby developing a detailed description of that process.
Step 5:	Have a cross-functional team analyze each process.
Step 6:	Have the cross-functional team identify lengthy tasks, choke points, repetitious tasks, and other problems in the process.
Step 7:	Determine and implement an action plan for process improvement.

[39] Johnson Edosomwan, *Organizational Transformation and Process Reengineering* (Boca Raton, FL: St. Lucie Press, 1996) Ch. 5.

[40] Ibid.

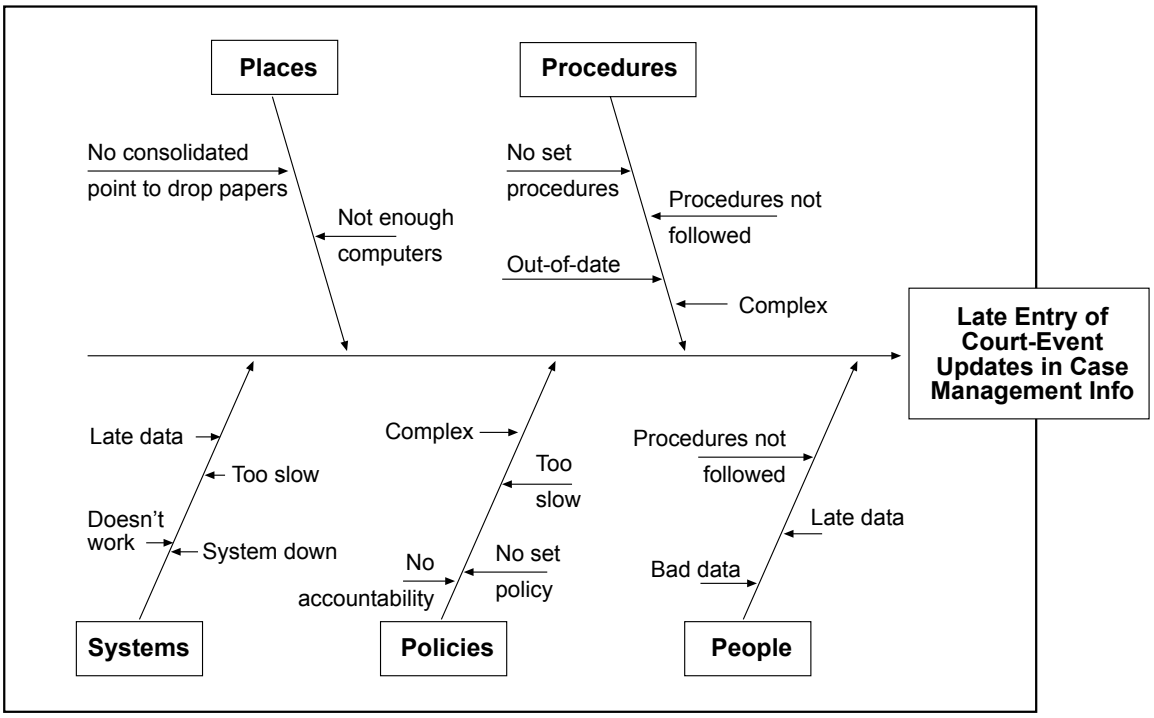
B. Statistical Presentation Techniques

Affinity Diagram. An affinity diagram is a way of organizing ideas generated by brainstorming into common areas (affinities) through facilitated discussion to arrive at a group consensus and then presenting ideas organized by affinity in a diagram.[41]

Fishbone Diagram. The fishbone diagram (also called "Ishikawa Diagram" or "cause-and-effect diagram") is the graphic result of the application of a technique combining brainstorming and affinity organizing to identify possible solutions. Participants brainstorm all possible aspects of the problem in generic terms (people, places, systems) and then brainstorm possible causes under each category (too many, too few, lack of training). It helps relate the elements of a process, linking possible causes to specific effects. See Figure 6.

[41] Chang and Niedzwiecki, pp. 15-23; USBR Guidebook, "Affinity Diagrams," http://www.usbr.gov/pmts/guide/toolbox/affinity.htm; and Vanderbilt University, "Affinity Diagrams," http://mot.vuse.vanderbilt.edu/mt322/Affinity.htm.

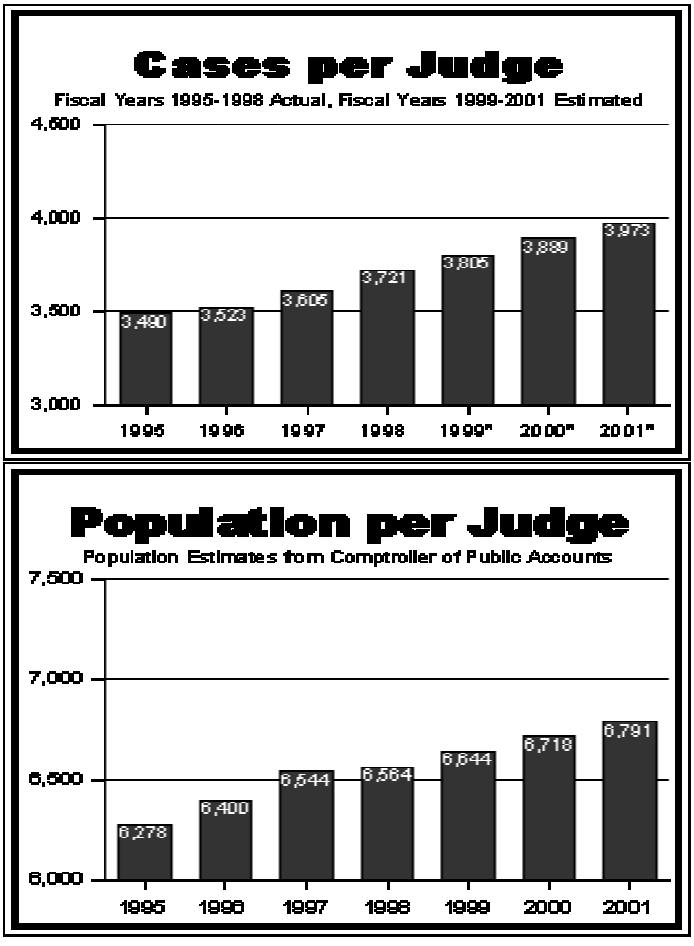
Figure 6. Late Entry of Court Event Data: Sample Fishbone Diagram with Potential Causes[42]



[42] Chang and Niedzwiecki, p. 52.

Histograms. A histogram is a bar chart representing a frequency distribution, in which the heights of the bars represent observed frequencies. One can use it to communicate information about the variation in a process, or to aid decisionmaking about where to focus improvement efforts. Two examples of histograms are shown in Figure 7, which present information from a census of the Texas court environment that was conducted in 1998 for the Supreme Court of Texas. The histograms show that court workloads and the constituency that courts served were both growing steadily between 1995 and 2001. As Figure 7 illustrates, a histogram is useful to show the distribution of data, to show where there may be a problem, or to track changes over time.

Figure 7. Histograms on Case and Population Trends per Judge in Texas Courts, 1995-2001[43]

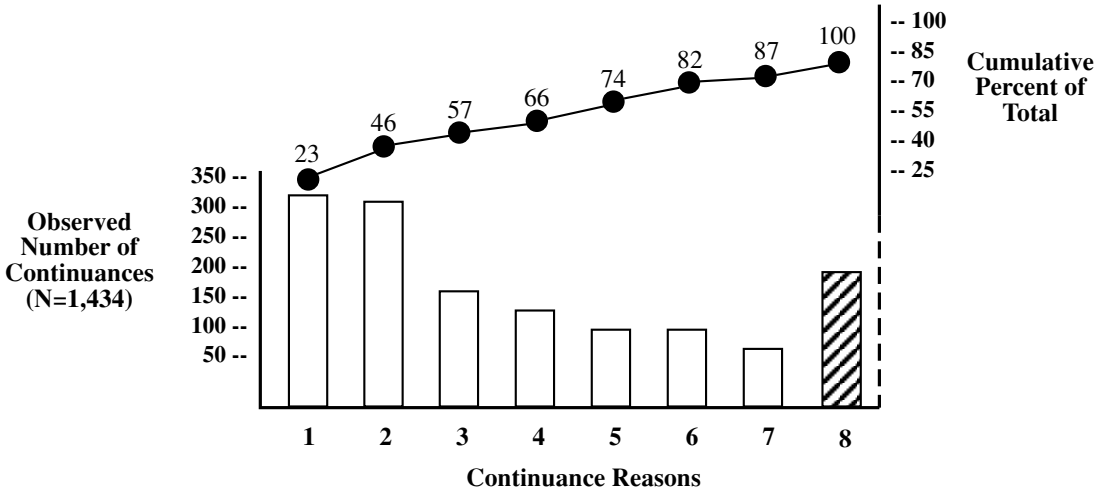


[43] Supreme Court of Texas, Judicial Committee on Information Technology, *First Annual Report,* "Executive Summary" (1999) http://www.courts.state.tx.us/jcit/report/execsum.htm.

Pareto Analysis. This technique is usually required when there are many complex reasons for problems that are occurring within a court's operational unit or within a specific business process. Figure 8 shows an example of a Pareto chart, involving the most common reasons found for criminal trial date continuances in criminal cases. As the figure shows, a Pareto chart combines a bar graph with a cumulative line graph. The bar graph shows the number of continuances by specific reason in descending order from left to right, with bar height reflecting a recorded number of different continuance reasons. The cumulative sum line shows the aggregate total percentage of all preceding bars.

This kind of presentation can enable a court to focus specifically on the most significant reasons for a problem (rather than diffusing its efforts over many more trivial reasons, such as those reflected by the highlighted bar number 8 in Figure 8), thereby allowing the court to seek potential solutions that will have the greatest likelihood of bringing about substantial improvements.

Figure 8. Sample Pareto Chart: 1979 Criminal Trial-date Continuance Reasons in Pittsburgh, Pennsylvania[44]



(See legend, next page)

[44] Samuel Conti, William Popp, and Don Hardenbergh, *Finances and Operating Costs in Pennsylvania's Courts of Common Pleas* (North Andover, MA: National Center for State Courts, Northeastern Regional Office, 1980) p. 78. Hereafter, Conti, Popp, and Hardenbergh.

Legend for Continuance Reasons

1 = Prosecution witness problem

2 = Prosecutor/defense attorney in another courtroom

3 = Defendant without attorney

4 = Excused absence of prosecutor/defense attorney

5 = Plea/diversion being negotiated

6 = Defendant ill

7 = Prosecutor/defense attorney needs more time to file motions

8 = All other reasons combined (*highlighted by diagonal lines*)

C. Simple Project Planning and Management Tools

Once a project team has been appointed to undertake the detailed work involved in BPE, or when a court is ready to begin implementation of a new business process, it is desirable to take steps to plan and manage such activities. For this purpose, there are several tools available, including: (1) action plans, (2) matrix diagrams, and (3) tree diagrams.

Action plans. An action plan can be a simple way to set forth the specific steps that will be taken to carry out a strategy or a task after a decision has been made on what course to follow. An action plan is a way to record and communicate intended actions, responsibilities, time frames, and needed resources. It is also a point of reference against which the court's BPE steering committee and project team can measure activities and events. An action plan should include tasks, subtasks and dependencies, responsibilities, deliverable dates, task time frames, and needed resources.[45]

Matrix diagrams. There are many different kinds of matrix diagrams. One is a planning tool to help organize large groups of tasks and responsibilities, such as: (a) matching tasks with individuals or organizations responsible to complete them; (b) rating the level of a person's or organization's responsibility for a task; or (c) assigning accountability and plan actions. Figure 9 is an example of a completed matrix diagram that assigns levels of responsibility for the tasks involved in preparing a new clerks' manual (after business processes in that office have been enhanced through a process improvement or process reengineering effort).

Tree diagrams. A tree diagram is a planning tool that can help the project team map out the path and tasks that must be accomplished to achieve a primary goal and the objectives or subgoals associated with that ultimate goal. Figure 10 shows an example of a partially completed tree diagram. It shows the "major tree headings" and two of the "detailed tasks" to be accomplished in order to upgrade a court's voicemail system.

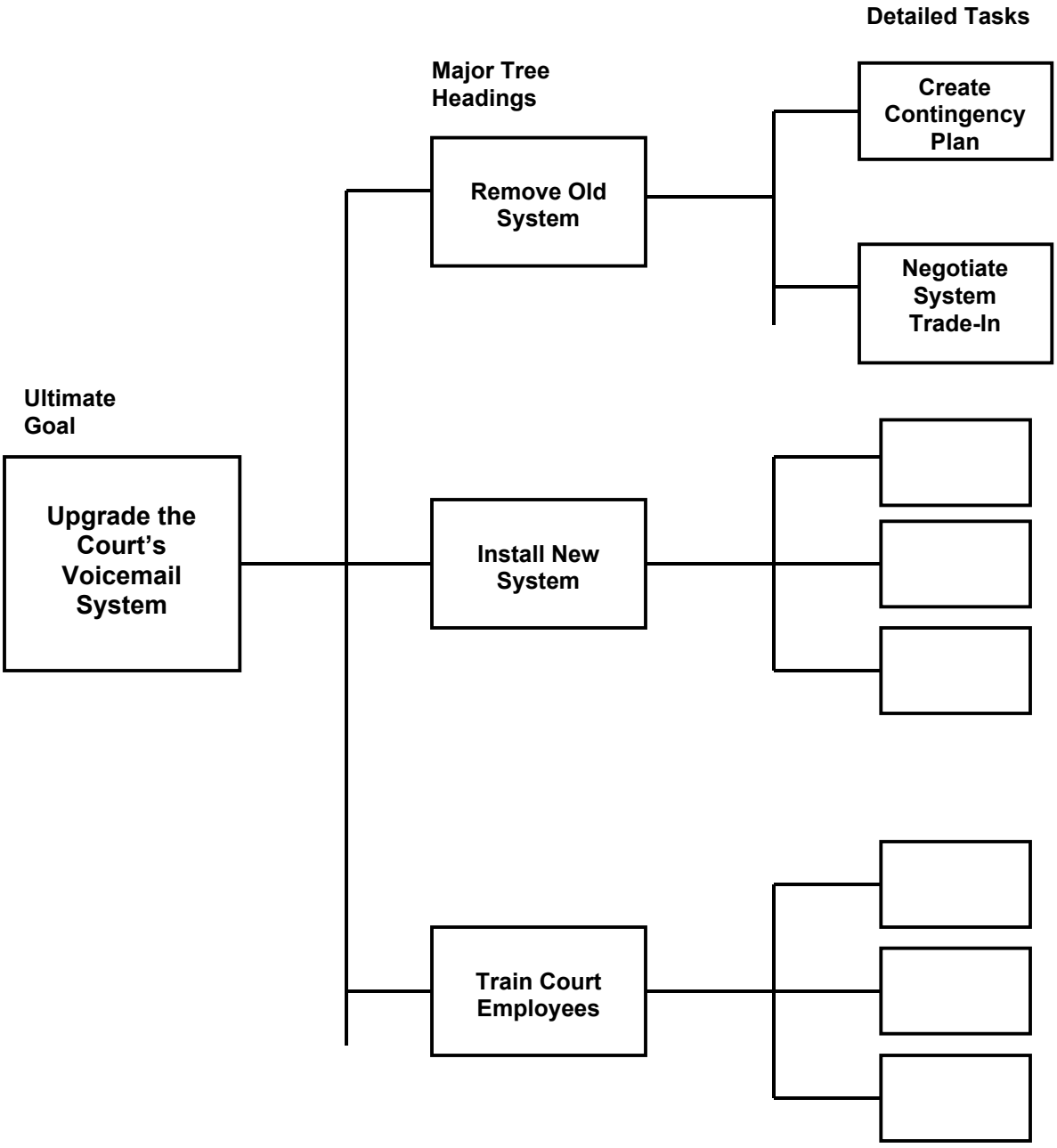
[45] USBR Guidebook, "Action Plan," http://www.usbr.gov/pmts/guide/actplan.htm.

Figure 9. Sample Matrix Diagram: Assigning Levels of Responsibility for Tasks in Preparing a New Clerks' Manual, Based on Enhanced Business Processes[46]

Responsibility / Task	Alice	Benjamin	Charlene	Dennis	Elizabeth	Court H.R. Director	Printing Company
Writing			S	P	C		
Proofreading	S+	S		C	P		
Editing	P	S		C			
Researching		P	S+		S		
Binding	C						P
Copying	C						P
Training	S					P	
Distribution	C					P	

[46] Chang and Niedzwiecki, p. 31.

Figure 10. Sample Tree Diagram: Partial Detail of Tasks to be Accomplished in Upgrading a Court's Voicemail System[47]



[47] Richard Chang and Matthew Niedzwiecki, *Continuous Improvement Tools: A Practical Guide to Achieve Quality Results* (Irvine, CA: Richard Chang Associates, 1993) Vol. 2, p. 13.

D. Advanced Project Planning and Management Tools

While the tools described above may be adequate for many projects, more sophisticated tools are needed to manage more complex BPE efforts, including: (1) critical path method, Gantt charts, and Program Evaluation and Review Technique (PERT) charts; and (2) joint application development teams.

Critical Path Method, Gantt Charts, and PERT Charts.[48] While action-planning worksheets can be used to plan and manage simpler process improvement efforts, other tools should be used to graphically track and describe how long activities and tasks will take, as well as how they might relate to one another. Three tools that can be used manually or with the assistance of project software are: analysis by the critical path method (CPM), Gantt charts, and PERT charts.

An essential concept behind project planning and analysis using CPM is that some activities are dependent on other activities having been completed first. These dependent activities need to be completed in a sequence, with each stage more-or-less completed before the next activity can begin. You can call dependent activities "sequential." Other activities are not dependent on completion of any other tasks. These may be done at any time before or after a particular stage is reached. They are nondependent or "parallel" tasks.

CPM is an extremely effective method for analyzing a complex project; it helps the project team calculate the minimum length of time in which the project can be completed, and which activities need to be completed by that date. Where a job has to be completed on time, critical path analysis helps to focus on the essential activities to which attention and resources should be devoted. It provides an effective basis for scheduling and monitoring progress.

Once the BPE project is underway, Gantt charts can help the steering committee and the project team monitor whether the project is on schedule. If a project is off-schedule, a Gantt chart will enable the project manager to pinpoint the remedial action necessary to put it back on track.

PERT is a variation on CPM that takes a slightly more skeptical view of time estimates made for each project stage. To use PERT, estimate:

a. The shortest possible time each activity will take.

b. The most likely length of time.

c. The longest time that might be taken if the activity takes longer than expected.

While CPM analysis can be conducted and presented manually with either a Gantt chart or PERT chart, the project team would probably prefer to use software tools to create such charts. Not only do computer-based project management software packages ease the drawing of these charts, but they also make modification of plans easier and provide facilities for monitoring progress against plans. The presentation of CPM analysis for the hypothetical installation of a simple customized court computer

[48] Mind Tools, "Gantt Charts," http://www.mindtools.com/pages/article/newPPM_03.htm, and "Critical Path Analysis and PERT Charts," http://www.mindtools.com/pages/article/newPPM_04.htm.

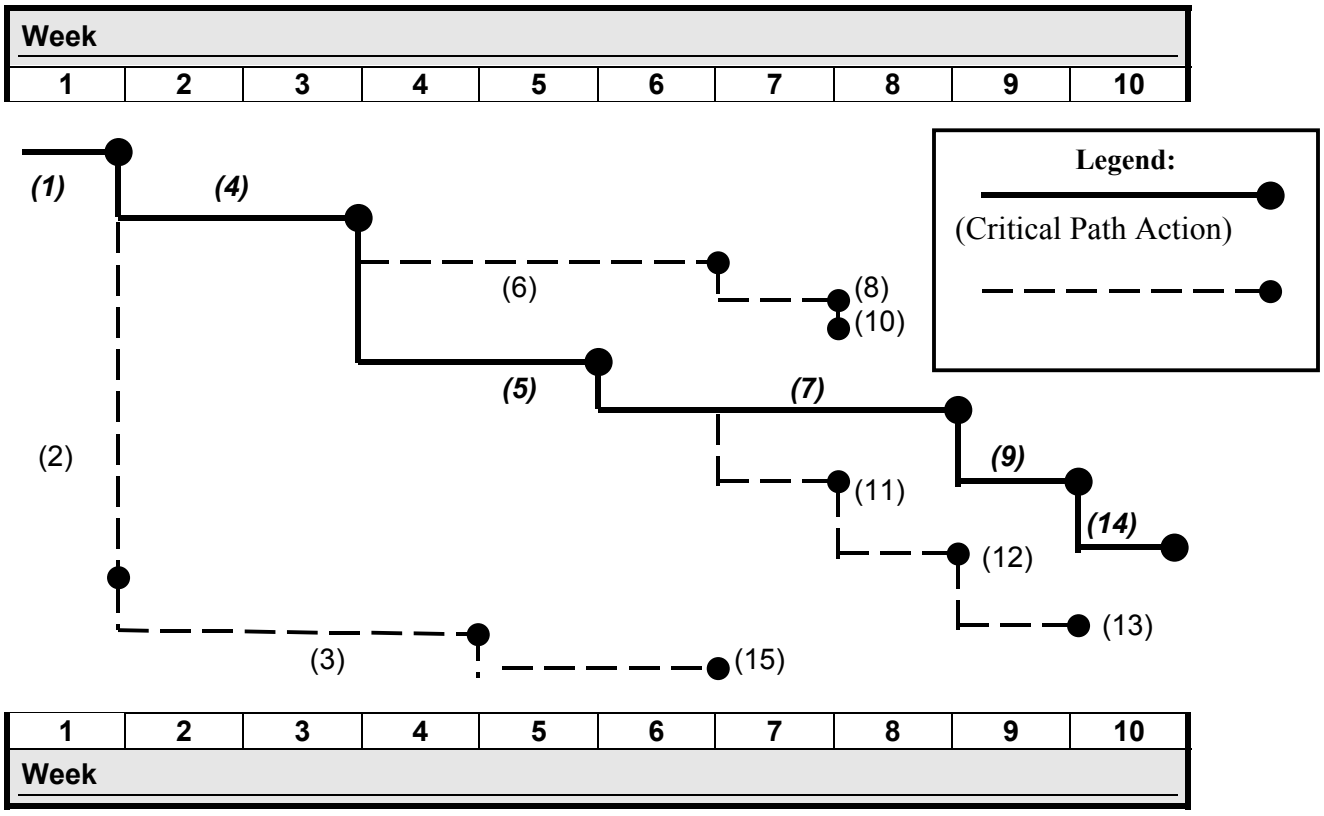
system is illustrated in Figure 11 (Gantt chart) and Figure 12 (PERT chart). The "critical path" is the longest sequence of dependent activities that lead to the completion of the plan. Any delay of a stage in the critical path will delay completion of the whole plan unless future sequential activities are accelerated.

Joint Application Development Teams.[49] Joint Application Development (JAD) is a management process that will enable the court's IT staff members to work more effectively with other court staff members or stakeholders in developing IT solutions. The purpose of JAD is to draw upon the resources within the court most familiar with the processes and systems being reviewed in order to best define the project objectives, design a solution, and then monitor the project until it reaches completion. The JAD process is based on four simple ideas:

1. People who actually do a job in a court have the best understanding of that job.
2. People who are trained in IT have the best understanding of the possibilities of court technology.
3. Court IT systems and court business processes rarely exist in isolation. Instead, they transcend the confines of any single court IT system or court office and affect work in other court or court-related departments. People working in those related areas have valuable insight on the role of a system within the larger environment of the court or the court community.
4. The best court IT systems are designed when all of these groups work together on a project as equal partners.

[49] University of Texas at Austin, Human Resources Services/Information Services, *Joint Application Development (JAD) – What do you really want*, http://www.utexas.edu/hr/is/pubs/jad.html.

Figure 11. Critical Path Method Analysis of a Simple Court Computer System Installation, Presented as a Gantt Chart[50]



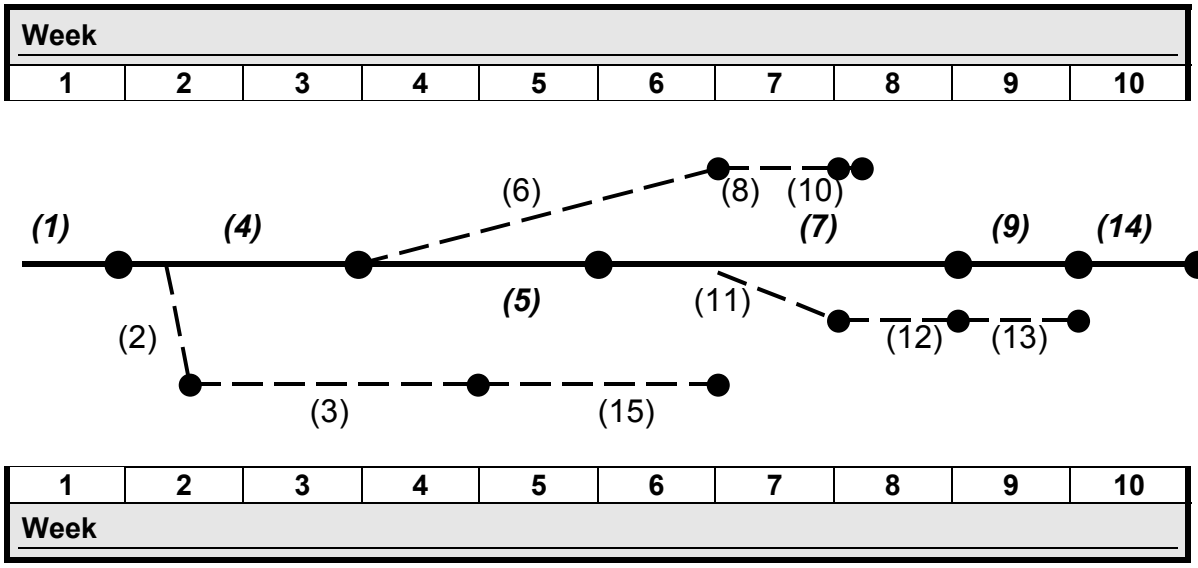
List of Tasks Illustrated Above (with estimated time to achieve each task)

(Those on the "Critical Path" are shown in ***Bold Print and Italics***)

(1) High-level Analysis (1 week)
(2) Selection of Hardware Platform (1 day)
(3) Installation of Hardware (2 weeks)
(4) Analysis of Core Modules (2 weeks)
(5) Analysis of Supporting Modules (2 weeks)
(6) Programming of Core Modules (3 weeks)
(7) Programming of Support Modules (3 weeks)
8. Quality Assurance, Core Modules (1 week)
9. QA, Supporting Modules (1 week)
10. Core Module Training (1 day)
11. Develop Accounting Reporting (1 week)
12. Develop Management Reporting (1 week)
13. Develop MIS (1 week)
14. Detailed Training (1 week)
15. Documentation (2 weeks)

[50] *See* note 48, "Critical Path Analysis and PERT Charts."

Figure 12. Critical Path Method Analysis of a Simple Court Computer System Installation, Presented as a Program Evaluation and Review Technique Chart[51]



Legend:

(Critical Path Action) *(Non-critical Path Action)*

List of Tasks Illustrated Above (with estimated time to achieve each task)

(Those on the "Critical Path" are shown in *Bold Print and Italics)*

(1) High-level Analysis (1 week)
(2) Selection of Hardware Platform (1 day)
(3) Installation of Hardware (2 weeks)
(4) Analysis of Core Modules (2 weeks)
(5) Analysis of Supporting Modules (2 weeks)
(6) Programming of Core Modules (3 weeks)
(7) Programming of Support Modules (3 weeks)
8. Quality Assurance, Core Modules (1 week)
9. QA, Supporting Modules (1 week)
10. Core Module Training (1 day)
11. Develop Accounting Reporting (1 week)
12. Develop Management Reporting (1 week)
13. Develop MIS (1 week)
14. Detailed Training (1 week)
15. Documentation (2 weeks)

[51] Ibid.

E. Software Tools

There are a number of automated tools available to help the court's BPE project team with at least some aspects of its undertaking. Among these are:

- Computer-based collaborative tools.
- Software-supported process analysis tools.
- Systems workflow and software modeling tools.

While software cannot substitute for the quality of human reasoning that BPE in a court will require, there are many process improvement or process reengineering tasks that can be assisted by software tools. Some of the tasks that can be helped by software tools are the following:[52]

- **Recording or structuring data**
- **Supporting decisionmaking (e.g., decision support systems)**
- **Diagramming process flows**
- **Isolating flow paths according to user-specific conditions**
- **Calculating process metrics**
- **Optimizing flow paths**
- **Modeling and simulating process layouts**
- **Performing dynamic "what-if" analysis on flow paths**
- **Pinpointing bottlenecks in a process**
- **Generating reports and plotting process-performance statistics**
- **Planning and tracking an enhancement project**
- **Diagnosing team behavior, values and resistance to change**

Computer-based collaborative tools. Collaborative tools (groupware) are computer-based tools that help the project team work together and share information. They allow for virtual online meetings and data sharing. Some examples of collaborative tools include those shown in Table 3.

[52] Lon Roberts, *Process Reengineering: The Key to Achieving Breakthrough Success* (Milwaukee, WI: ASQC Quality Press, 1994) p. 159.

Table 3. Examples of Generic Collaborative (Groupware) Tools[53]

Tool	Description
Chat (Audio and text)	Use this to conduct toll-free conversations. No need to wait for something to arrive in your mailbox.
Whiteboard	Permits real-time display of drawings, pictures, or documents for group discussion and comment. Participants can annotate in real time as well.
Bulletin board	Used to post notices and facilitate discussions on any topic.
Video	Use video at a desktop computer or a video teleconferencing center to see the person or group with whom you are working.
Discussion groups (newsgroups)	Topics are posted to a Web site for discussion and comment where participants can follow a line of discussion on a topic.
File-sharing tools	Virtual file cabinets allow information to be stored on Web servers, and are available to anyone having access to the site and electronic permission to use the files.
Presentation tools	These are used in a virtual auditorium and allow lectures and briefings to be given to an audience.
Text tools	Allows live text input and editing by group members. Once complete, the text document can be copied into word processing software.
Email	The most popular way of exchanging communications electronically.
Persistent capability	This is the ability to preserve files, briefings, or other team/project material for future reference. Properly organized, it becomes a knowledge management device and is invaluable to a long-term effort.
Instant messaging	Most popularly known as "text chat," this allows real-time exchange of notes and messages.

Collaborative tools are useful for bringing geographically dispersed teams together for virtual meetings. A benefit for the court's steering committee or project team is that they would be able to interact more easily with process experts in other locations. This could bring more information to the team faster and can elicit important inputs that may have been missed just because it was inconvenient or expensive for someone to travel physically to a meeting. In addition, collaborative tools allow better change management by permitting the project team to communicate

[53] BPR On-Line Learning Center, *BPR Tutorial Series*, "Knowledge Management and Collaboration Tools in Business Process Reengineering – Tutorial 1," http://www.prosci.com/collaboration-tools_2.htm.

continuously with other staff members in the court.

Software-supported process analysis tools. These tools are paper-based, although some are computer-supported to the extent of providing drawing support and consistency checking. There are several tools available to you in this category, and three that are relatively popular are Integration Definition (IDEF), Petri Nets, and Role-Activity Diagrams (RAD).

IDEF software generates graphics for each step in a given process. **Petri Nets** are graphical and mathematical tools used to describe the dynamics of processes in an organization. They use tokens to reflect the dynamic nature of a process. **Role Activity Diagrams**, on the other hand, depict the human dynamics of processes.

Systems workflow and software design modeling tools: Project teams should consider the use of computer-based tools to create models of new systems or to generate computer code to support new system designs.

Unified Modeling Language™ (UML). The trademark for this computer language belongs to the Object Management Group (http://www.omg.org/), which sets vendor-neutral software standards and enables distributed, enterprisewide operability. UML™ is the industry-standard language for specifying, visualizing, constructing, and documenting the artifacts of a software system. It simplifies the complex process of software design, making a "blueprint" for construction. It provides application modeling for: (1) business process modeling with use cases; (2) class and object modeling; (3) component modeling; and (4) distribution and deployment modeling.[54]

> The Harris County (Dallas, Texas) Justice Information System team has used the "Rational" suite of modeling software products to facilitate their transition from a legacy integrated criminal justice information management system (JIMS1) to a new integrated system (JIMS2). The software was used to bring discipline to both the business development and the documentation processes, and to help document the court's business rules. "Rational Rose" (http://www.rational.com/products/rose/index.jsp) will be used to generate basic Java code that will need to be refined and supplemented with original Java code. Rational tools use a complete integrated life-cycle solution that assists the team with each step of software development: requirements and analysis, software development, and system testing.

Systems Workflow. Business processes in a court typically consist of a number of well-defined steps, which are often repeated in every process cycle. The prevalence of such steps, and the inherent inefficiency of moving documents, forms, memoranda, and other such papers from one workstation to the next, has prompted the development of software tools known as "workflow systems." Workflow systems developed by different vendors may

[54] IBM, "UML Resource Center," http://www.rational.com/uml/index.jsp.

have a variety of features, but they share the capacity to map workflow and route work products among various points in a business process as it has been mapped.

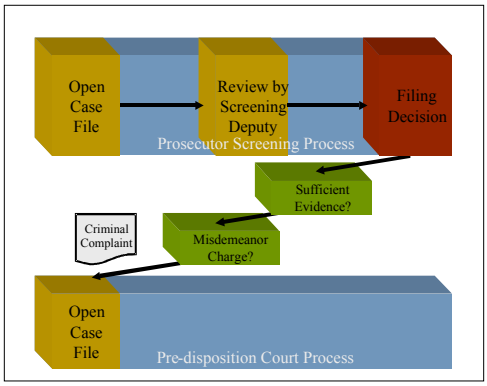
Most commonly available software tools of this nature allow a BPE project team to map business processes and make changes without extensive programming. The most important feature of workflow systems is that they allow a proposed alternative process to be modeled easily and tested before being implemented. The actual workflow routing capabilities of such systems can only be used beneficially once the process configuration has been determined.

One example of a workflow system, which also allows modeling of solutions, is the public domain Justice Information Exchange Model (JIEM)[55] software developed by SEARCH for the Bureau of Justice Assistance, U.S. DOJ. JIEM is a Web-based software application that enables information exchange analysis among justice agencies. It was originally developed as an analytical tool to facilitate comparison of functions performed by different jurisdictions. The software defines universal dimensions of information exchanges between courts and court-related agencies, as well as a research and planning methodology for modeling the operational dynamics of this information exchange. JIEM can be used with that methodology to capture detailed information regarding the processes, events, agencies, information, and exchange conditions associated with justice information integration. The following are sample outputs of the software:

[55] SEARCH Justice Information Exchange Model Project, http://www.search.org/integration/info_exchange.asp.

Business Process Enhancement in the Courts - Basic Principles: Document the System

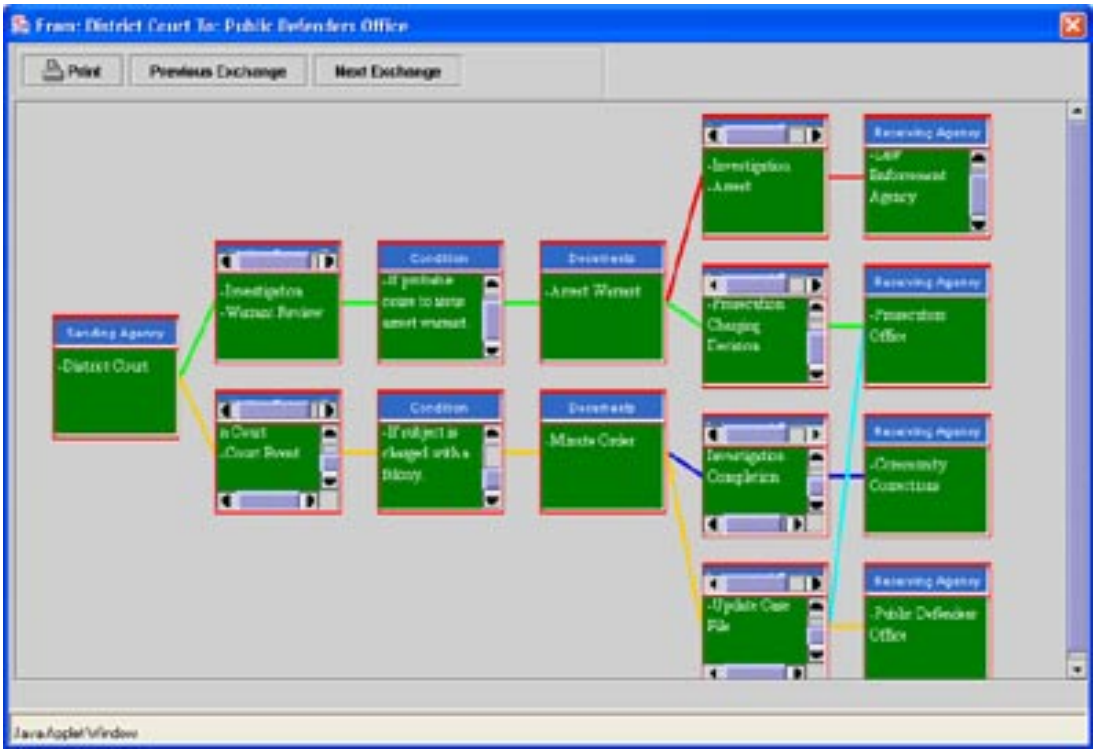
Integrated Justice Information System (JIEM)

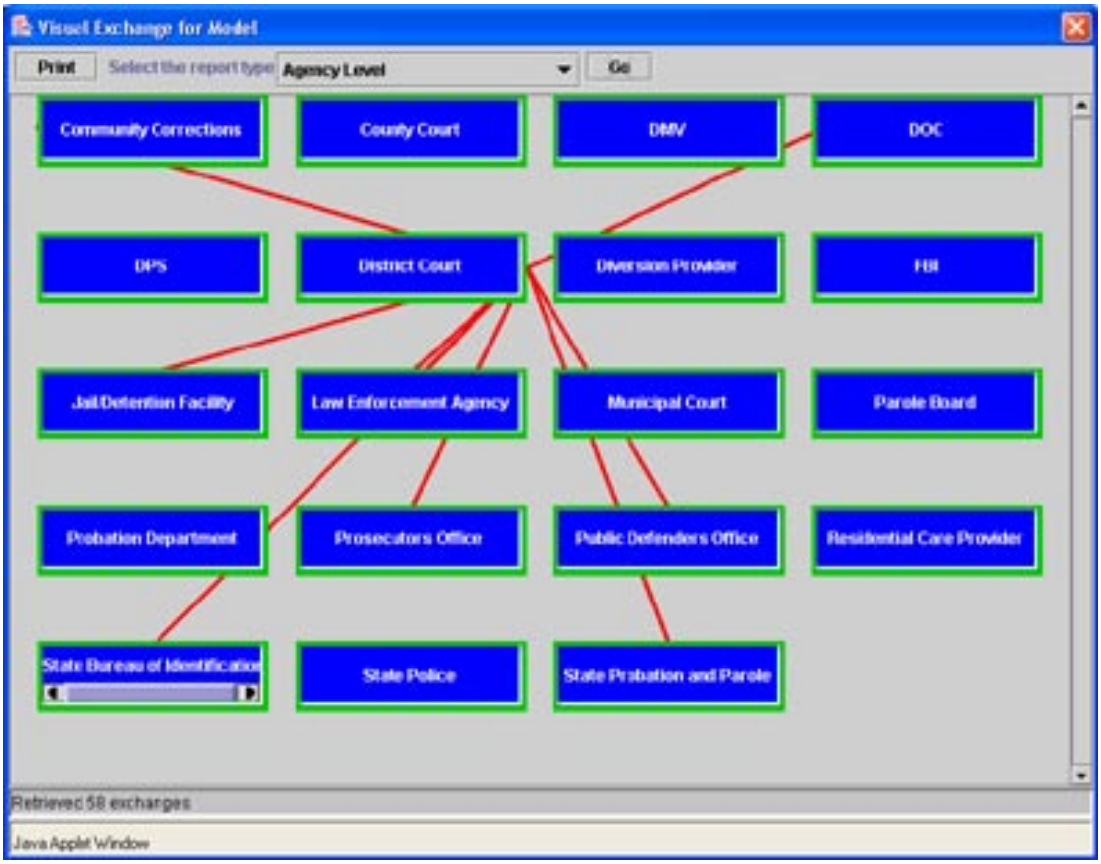


Agency Centric Report

Filter Criteria: Agency = 'All'
Create Date: Wed Jun 04 13:34:57 PDT 2003

Sending Agency	Initiating Process	Initiating Event	Condition	Document	Receiving Agency	Subsequent Process>	Sub-sequent Event
Community Corrections	Post-Disposition Court	Pre-Sentence Investigation Completion	• No condition specified.	• Pre-Sentence Investigation Document	Prosecutors Office	Post-Disposition Court	Update Case File
			• No condition specified.	• Pre-Sentence Investigation Document	District Court	Post-Disposition Court	Sentence Hearing
			• No condition specified.	• Pre-Sentence Investigation Document	Public Defenders Office	Post-Disposition Court	Update Case File
	Post-Disposition Supervision	Probation Revocation	• If subject fails to comply with terms of probation.	• Notice of Alleged Violation of Probation	Prosecutors Office	Post-Disposition Supervision	Update Case File


From: District Court To: Public Defenders Office
Print
Previous Exchange
Next Exchange
Sending Agency
-District Court
Condition
Decisions
-Arrest Warrant
-Investigation
-Arrest
Receiving Agency
-Law Enforcement Agency
-Prosecution Charging Decision
-Prosecution Office
-Investigation Completion
-Community Corrections
-Update Case File
-Public Defender Office
Java Applet Window


Visual Exchange for Model
Print
Select the report type:
Agency Level
Go
Community Corrections
County Court
DMV
DOC
DPS
District Court
Diversion Provider
FBI
Jail/Detention Facility
Law Enforcement Agency
Municipal Court
Parole Board
Probation Department
Prosecutors Office
Public Defenders Office
Residential Care Provider
State Bureau of Identification
State Police
State Probation and Parole
Retrieved 58 exchanges
Java Applet Window

A number of Internet Web sites identify the full range of public domain and proprietary software tools currently available, and Table 4 shows some of those sites that list vendors and their products.

Table 4. Sources of Information About Vendor-specific Software Tools

- **Business Process Change, "Business Process Reengineering Tools Search Page" (http://dmsweb.badm.sc.edu/grover/mgsc796/present/srtoolp.htm)**
- **Business Process Management Initiative (http://www.bpmi.org/)**
- **Business Process Reengineering Advisory Group (http://www.eil.utoronto.ca/tool/BPR.html)**
- **Business Process Reengineering and Innovation (BRINT) (http://www.brint.com/BPR.htm)**
- **"dmoz" open directory project, "Computers: Software: Business: Management" (http://dmoz.org/Computers/Software/Business/Management/)**
- **Doculabs, "Special Report on Workflow Products" (http://www.doculabs.com/catalog/TOC/wf_toc.htm)**
- **Gartner Group http://www3.gartner.com/Init**
- **Infogoal, "Directory of Process Remodeling and Business Process Reengineering Resources" (http://www.infogoal.com/dmc/dmcprc.htm)**
- **iSixSigma, "Six Sigma and Quality Software" (http://www.isixsigma.com/tt/software/)**
- **KnowledgeStorm (http://www.knowledgestorm.com/)**
- **Software Technology Support Center, "Business Process Reengineering Tools List" (http://www.stsc.hill.af.mil/resources/tech_docs/reng.html)**
- **Workflow and Reengineering International Association, "WARIA Databases" (http://www.waria.com/databases/databases.htm)**

F. *Basic Methodologies Supporting Business Process Enhancement*

Some of the key steps in a court's BPE effort involve the application of particular methods that have their own detailed procedures. Basic methods include:

- Benchmarking.
- Cost/benefit analysis.
- Risk analysis, which is closely tied to cost/benefit analysis.

Benchmarking.[56] This is a performance measurement tool used in conjunction with BPE initiatives to measure comparative operating performance and identify "best practices." Benchmarking can be used with either process improvement or process reengineering, and can also be used to blend them together into a single change management system.

Cost/benefit analysis.[57] This is a relatively simple and widely used technique to help the court decide whether to make a change. As its name suggests, using the technique involves simply adding up the value of the benefits of a course of action, and then subtracting the costs associated with it. Costs may be one-time, or they may be ongoing. Benefits are most often received over time. To build this effect of time into the analysis, it is necessary to calculate a payback period. This is the time it takes for the benefits of a change to repay its costs. Many organizations look for payback over a specified period of time — e.g., three years.

Risk analysis.[58] As noted in the preceding section, risk analysis interacts significantly with cost/benefit analysis. All BPE projects inherently have some degree of risk that may affect the timely completion, cost, and quality of a project. The goal of risk analysis is to acknowledge and deal with high risk. A project with a significant benefit may have a good chance of approval in spite of a high risk of failure. Unless the risk is mitigated, the benefits are less likely to be realized and might be less significant than anticipated. If the court cannot mitigate the risks, then it should have a contingency plan to deal with the impact of the risk on the project.

G. *Advanced Methodologies Supporting Business Process Enhancement*

In addition to the basic methodologies of benchmarking and cost/benefit analysis, the team should consider employing other methods to enhance a more complex business process or set of processes. Among the methods one might use are:

- Activity-based costing.

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[56] American Productivity and Quality Center, "Benchmarking Methodology," http://www.apqc.org/portal/apqc/site/generic2?path=/site/benchmarking/benchmarking_methodology.jhtml and "Benchmarking and Best Practices," http://www.apqc.org/portal/apqc/site/generic?path=/site/benchmarking/overview.jhtml.

[57] *See* Mind Tools, note 17.

[58] *See* Tennessee Department of Finance and Administration, Office of Information Resources, "1999 Cost Benefit Analysis Methodology," note 19; *see also* Kansas Department of Human Resources, Change and Transition Management Board, *Project Leadership Series,* Part VII, "Tips for Successful Risk Management," http://www2.hr.state.ks.us/tips/html/riskmgmt.htm (January 2001).

- Balanced scorecard.
- Capability maturity model.
- Simulation.
- Six Sigma.
- The trial court performance standards and measurement system.

Activity-based costing (ABC).[59] This is an accounting technique that allows an organization to determine the actual cost associated with each of its services, without regard to its organizational structure. In order to achieve the major goals of BPE, the project team needs to fully understand the cost, time, and quality of activities in the court's business processes. ABC methods enable the process enhancement project team to apply cost measurements for BPE. While ABC can be done manually, there are software programs (such as IDEF, which is discussed above) that can be used to provide a structured approach to identify and analyze the activities in a business process.

ABC has been used from time to time to analyze court costs. In 1979, for example, NCSC used a simple form of it to measure the cost of continuances for the general-jurisdiction trial court serving greater Pittsburgh, Pennsylvania.[60]

In 1979, the Administrative Office of Pennsylvania Courts engaged the National Center for State Courts (NCSC) to determine the cost of continuances to the courts in Allegheny County (Pittsburgh) and other counties in the western part of the State.

Using ABC analysis, NCSC determined that each criminal trial continuance cost the court an estimated $79 ($196 in 2002 dollars), and that 47% of continuances were generally avoidable. The study found the cost of civil continuances was even higher ($174, or $432 in 2002 dollars).

Balanced scorecard.[61] Using this management and performance measurement system effectively can enable the court to clarify its vision and strategy, and to translate them into action. The balanced scorecard provides feedback around both the internal business processes and external outcomes in order to improve or reengineer processes to achieve better strategic performance and results.

[59] Federal Aviation Administration, *Business Process Improvement (Reengineering) Handbook,* Chapter 5, "Activity Based Costing," http://www.faa.gov/ait/bpi/handbook/chap5.htm.

[60] Conti, Popp, and Hardenbergh, pp. 66-81.

[61] *See* Balanced Scorecard Institute, "What is the Balanced Scorecard?" http://www.balancedscorecard.org/basics/bsc1.html.

The balanced scorecard approach allows the project steering committee and project team to see the court's business processes in a broad perspective, from four perspectives:

1. Organizational learning and growth in the courts.
2. Court business processes.
3. Perspectives of internal and external customers.
4. Court finance.

Capability Maturity Model® (CMM). Developed by the Software Engineering Institute at Carnegie-Mellon University, CMM® is a conceptual framework based on industry best practices to assess the process maturity, capability, and performance of a software development organization.[62] The concept for this model was developed in the 1980s, when computer experts concluded that the quality of a software application was directly related to the sophistication of the application development company and the quality of its software development processes.

This tool assesses software application development organizations in the following areas:[63] (a) commitment to perform (policies and leadership); (b) ability to perform (resources and training); (c) activities performed (plans and procedures); (d) measurement and analysis (measures and status); and (e) verification of implementation (oversight and quality assurance). Organizations using this model for self-improvement in the past decade have reported gains in productivity, quality, time to delivery, and accuracy of cost and schedule estimates. Any court may use CMM® to assess the capability of a vendor providing software development services to the court. Perhaps more importantly, however, the IT department of the court may use it as a self-assessment tool to measure its own capability and maturity as an organization that develops software applications for the court.

Simulation.[64] A simulation is the imitation of the operation of a real-world process or system over time. Whether manual or automated, simulation involves the generation of an artificial history of a business process in a court, and the observation of that artificial history permits inferences to be drawn concerning the operating characteristics of the court's actual business process. The behavior of a business process over time is studied by developing a simulation model. This model usually takes the form of a set of assumptions concerning the operation of the process. These assumptions are expressed in mathematical, logical, and symbolic relationships between the entities or objects of interest of the process. Once developed and validated, the court can use a model to investigate a wide variety of "what if" questions about the real-world process. An excellent example of the use of simulation for business process improvement in a limited-

[62] Larry Whittington, "The SEI Software Capability Maturity Model," http://www.whittingtonassociates.com/v2/resources/articles/sei_cmm.shtml.

[63] For additional information on decision tools, *see* Gartner, Inc., "Decision Tools," http://www3.gartner.com/4_decision_tools/measurement/decision_tools/decision_tools.html.

[64] New Jersey Center for Multimedia Research, "Introduction to Simulation," http://www.njcmr.org/mpids/deep-eng/IE/Simulation/Chapter1%20-%20Final.htm.

jurisdiction court is the municipal court of Beaverton, Oregon, which used simulation software to: (a) provide users with quick, easy, and reliable access to current documents; (b) ensure document completeness and accuracy; and (c) address formal procedures in the face of such new technologies as photo-radar traffic tickets.[65]

While the availability of special-purpose simulation languages, massive computing capabilities at a decreasing cost per operation, and advances in simulation methodologies have made simulation one of the most widely used and accepted tools in operations research and systems analysis in the Federal government and in private businesses, simulation has not been used widely in court BPE efforts. One reason for this is that simulation can still be expensive, despite constantly dropping costs, while many problems in court processes can be addressed with simpler and less costly tools.

Six Sigma.[66] In its purest form, Six Sigma is a disciplined, data-driven methodology for eliminating defects in any process. In many organizations, it simply means a measure of quality by which the organization strives for near perfection in its business processes. Statistically, Six Sigma describes quantitatively how a process is performing, with the goal of having a process that produces no more than 3.4 defects per million opportunities. (A "defect" is anything that does not meet customer needs; an "opportunity" is any activity from which a defect can result.) The basic objective of the Six Sigma methodology is to implement a measurement-driven strategy that focuses on process enhancement through the reduction of defects.

Trial Court Performance Standards and Measurement System.[67] This system is the culmination of an eight-year initiative begun in 1987 by the Commission on Trial Court Performance Standards to develop measurable performance standards for the nation's State and local trial courts. It expresses a philosophy and framework for defining and understanding the effectiveness of trial courts by focusing attention on performance, self-assessment, and self-improvement. The system sets forth 22 standards of performance for trial courts in five performance areas:

1. Access to justice.
2. Expedition and timeliness.
3. Equality, fairness, and integrity.
4. Independence and accountability.
5. Public trust and confidence.

[65] *See* Petrakis and Engiles, note 34, http://www.informs-cs.org/wsc00papers/278.PDF. *See also*, City of Beaverton, Oregon, "Municipal Court," http://www.ci.beaverton.or.us/departments/court/default.asp.

[66] *See* iSixSigma Web site, http://www.isixsigma.com.

[67] Bureau of Justice Assistance, U.S. Department of Justice, and National Center for State Courts, *Trial Court Performance Standards and Measurement System*, http://www.ncsconline.org/D_Research/TCPS.

The system's measurement component consists of field-tested measures for evaluating how well the court is meeting these performance standards. It encourages trial courts to conduct regular self-assessments and improvements, treating them as routine court administrative activities. To this end, the measurement component is designed to gather information that the court can use in a variety of ways, including budgeting, case management, implementing court improvement projects, and strategic planning.

Chapter IV. Conclusion

BPE is not for the short-winded. Successful completion of a process review or reengineering project should be celebrated and recognized both as an end and a beginning. Even after the court has undertaken a successful BPE effort that is yielding improved court performance in view of the court's strategic goals and the needs and requirements of its internal customers and external court users, the court's work is not done. The court needs to continue to build on this success, and to use the performance measures and other tools used in the BPE project to bring about even further process improvements in the future.

Take advantage of success. If the implementation effort has been successful, make good use of it. Be sure to recognize all those whose planning, work, determination, and support contributed to the positive outcome. Be sure to let everyone — judges, court staff, representatives of court-related agencies, stakeholders, and members of the public — know what happened and why. Be sure to do the following:[68]

- Apply the success achieved to other court problem-solving efforts.
- Analyze the entire history of this process-enhancement effort to see what might successfully be transferred into other court programs and business processes.
- Advise others about what worked and what did not.
- Advertise the success.

Use performance measures as a feedback loop for further process improvements. The world will not stand still after the court has succeeded in introducing the new or improved business process. There will be continuing further changes — new trends in case volume and case mix; changes in legislation; changes in judicial and support staff; new prosecutors and other new local officials; demographic changes in the community; new developments in IT; and other changes in society in general.

In the face of such changes, the gains achieved by the enhancement effort process can erode unless the court continually monitors its performance and makes further refinements. Use performance information as a tool to aid continuous improvement of work processes. To make this happen, do the following:

- As a matter of routine, continue to review data and apply the performance measures to the now-enhanced business process to identify any performance gaps that may arise.
- Encourage judges and court staff members to use performance data to find further ways to improve the new or improved process.
- Periodically assess the court's performance goals and objectives for this process to see if it would be appropriate to seek even higher levels of performance.

[68] *See* USBR Guidebook, "Handling Success," http://www.usbr.gov/pmts/guide/handsucc.htm.

Continue to refine and improve the process. Even as the court celebrates completion of the project, the court should also recognize it is at the beginning of an ongoing cycle of continuous process improvement. Continuous process improvement will provide the following benefits:

- Improved work environment for judges and court staff members.
- More effective and efficient justice services to court users.
- Greater support from court system leaders and funding bodies.
- Broad recognition as a court with a high-quality operation.
- Greater public trust and confidence in courts and the administration of justice.

It is worthwhile to see what kinds of goals for even higher improvement are appropriate for the court. Examples of very ambitious quality criteria for setting higher performance goals include the criteria for the Malcolm Baldrige National Quality Program at the National Institute for Standards and Technology Web site.[69] Another excellent resource on quality performance is the SixSigma Web site.[70] See also the six levels of process quality suggested by process improvement expert H. James Harrington:

[69] *See*, National Institute of Standards and Technology (NIST) Web site: http://www.quality.nist.gov.

[70] *See* www.isixsigma.com.

Table 5. Levels of Business Process[71]

Level	Status	Description
6	Unknown	Process status has not been determined.
5	Understood	Process design is understood and operates according to prescribed documentation.
4	Effective	Process is systematically measured, streamlining has started, and expectations of internal and external customers are met.
3	Efficient	Process is streamlined and is more efficient.
2	Error-free	Process is highly effective (error-free) and efficient.
1	World-class	Process is among the best in any court in the country or the world, and it continues to improve.

For most courts, the results of a successful BPE effort will have raised the court from Level 6 to Level 4, or from Level 5 to Level 3, in terms of the framework offered by Harrington. The question is whether it is possible for the court to advance to Level 2 or even Level 1. To make such a further leap forward, Harrington suggests that the kinds of steps to take include the following:

- Periodically assess where the court is in terms of these levels.
- Define and eliminate problems in existing business processes.
- Evaluate the impact of changes on court operations and court users.
- Do further benchmarking about best practices in other courts.
- Provide further education and training for judges and court staff members.

[71] Harrington, p. 206.

Appendix A:
About SEARCH,
the National Center for State Courts,
and Project Staff

SEARCH, The National Consortium for Justice Information and Statistics

SEARCH, The National Consortium for Justice Information and Statistics, is a nonprofit membership organization created by and for the States, which is dedicated to improving the criminal justice system and the quality of justice through better information management, the effective application of information and identification technology, and responsible law and policy. Since 1969, SEARCH's primary objective has been to identify and help solve the information management problems of State and local justice agencies confronted with the need to automate and integrate their information systems, and to exchange information with other local agencies, State agencies, agencies in other States, or with the Federal government. SEARCH's headquarters are in Sacramento, California.

The National Center for State Courts

The National Center for State Courts (NCSC) is a nonprofit corporation dedicated to the modernization of our nation's courts. The Center acts as a focal point for judicial reform, serving as the catalyst for implementing standards of fair and expeditious judicial administration, and helping to determine and disseminate solutions to problems of State and local judicial systems. NCSC's work includes providing information, technical assistance, and consulting services to courts and other interested parties, and conducting research and evaluations in all areas of court operation.

NCSC also publishes journals, newsletters, bulletins, books, monographs, and reports to keep the State courts informed of its own activities and activities in the State courts.

Project Staff

Francis L. Bremson. Mr. Bremson is Director of the Courts Program for SEARCH, and served as SEARCH Project Manager in the development of the *Court Business Process Enhancement Guide*. At SEARCH, he is responsible for managing the Court Information Systems Technical Assistance Project funded by the U.S. Department of Justice (DOJ). Prior to joining SEARCH in 1997, Mr. Bremson held a variety of management positions in State and Federal courts. He has served as Circuit Executive for the Ninth U.S. Circuit in San Francisco, California; Director of the Alaska Judicial Council; Regional Director of NCSC in St. Paul, Minnesota; and Director of the Cleveland (OH) Court Management Project. He also has served in government marketing positions for legal publishers LEXIS-NEXIS and Legitech.

Mr. Bremson holds a bachelor's degree from Hobart College in New York and obtained his J.D. from the Georgetown Law Center. He is also a Fellow of the Institute for Court Management.

Honorable Judith D. Ford. Judge Ford served as a Judge of the Superior Court of Alameda County (Oakland), California, from 1988-2002, as a Judge of the Oakland-Piedmont-Emeryville Municipal Court from 1983-1988, and as Presiding Judge of that court from 1987-

1988. Judge Ford is a nationally recognized expert in the application of technology to improve judicial administration, having served as chair of the California Judicial Council's Court Technology Advisory Committee from 1998-2001; as a member of the board of LegalXML; and as a member of the team that drafted Standards for Electronic Filing Processes, an effort sponsored by NCSC. As a judicial member of the COSCA/NACM Joint Technology Committee, Judge Ford served as chair of the Technology Reengineering Subcommittee and led the effort to develop this Guide from the project's inception in 2000 through publication in 2003.

Judge Ford received the Lifetime Achievement Award from the Women Lawyers of Alameda County in 2000; the LEXIS-NEXIS CourtLink Excellence in Legal Technology Award in 2002 in recognition of her leadership and innovation and for championing technology to deliver breakthrough advances in the practice of law; and the Distinguished Service Award from NCSC in 2003, presented annually to a "State trial court judge who has made longstanding contributions to the improvement of the justice system and who has supported the mission of the National Center."

Judge Ford received her bachelor's degree in Business Administration from the University of California, Berkeley, and her J.D. from Boalt Hall School of Law, University of California, Berkeley. She was admitted to practice by the State Bar of California in 1974.

John M. Greacen. Mr. Greacen is a Principal of Greacen Associates, LLC, a court management consulting firm in Regina, New Mexico. He served as co-chair of the COSCA/NACM Joint Technology Committee at the time the Business Process Enhancement Project was initiated, and subsequently served as a consultant to the Technology Reengineering Subcommittee in conducting this project and in developing this Guide. He previously served as State Court Administrator for the State of New Mexico from 1996-2001, during which time he served as chair of the Court Technology Committee for COSCA; co-chair of the Joint Technology Committee of COSCA/NACM; and as chair of the Electronic Court Filing Technical Committee of the OASIS Legal XML Member Section.

Prior to becoming the State Court Administrator of New Mexico, Mr. Greacen was Clerk of the U.S. Bankruptcy Court for the District of New Mexico in Albuquerque; Clerk of the U.S. Court of Appeals for the Fourth Circuit in Richmond, Virginia; and Deputy Director for Programs at NCSC in Williamsburg, Virginia. Mr. Greacen has an A.B. from Princeton University and a J.D. from the University of Arizona. He has received the Director's Award for Excellence in Leadership from Ralph Mecham, Director of the Administrative Office of the United States Courts, for his leadership in appellate court automation and management, the 1999 Award of Merit from NACM, and the Pioneer Award from the New Mexico State Bar.

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Edward L. Papps. Mr. Papps is a Senior Court Technology Associate for NCSC and served as staff to the Technology Reengineering Committee in the development of the project design. He has over 34 years of experience in the computer field. His experience has been in the manufacturing, publishing, financial, military, and electrical power areas in the private sector and the judicial branch of government. Prior to his position with NCSC, he worked for the 16th Judicial Circuit Court of Missouri. Mr. Papps is a past member of the Advisory Committee on Technology for NCSC, and has served on the Board of Directors of the World IT Congress. He is founder of the National Judicial IT Directors Organization. Mr. Papps' published articles have appeared in a number of computer trade publications and association newsletters. Mr. Papps received a bachelor's degree in Business Administration with a major in Systems Management from Rockhurst College in Kansas City.

Robert T. Roper. Dr. Roper is Chief Information Officer for the Colorado State Courts. He is an original member of the Colorado Integrated Criminal Justice Information System Task Force. He is actively involved in numerous consulting and training activities throughout the trial courts in the United States and internationally. Dr. Roper served as both a member of the

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Dr. Roper was a Senior Staff Associate at NCSC's Institute for Court Management (ICM) between 1988-1992, where he designed and taught ICM/NCSC's course on *Conducting Court Evaluation Projects.* Before joining the ICM office in Denver, Colorado, Dr. Roper was a Senior Staff Associate at NCSC in Williamsburg, Virginia, where he directed the Court Statistics and Information Management Project between 1985-1988.

Dr. Roper received his Ph.D. in political science and research methods from the University of Kentucky in 1978.

David J. Roberts. Mr. Roberts is Director, Integrated Justice Programs, J&PS Global Industries, Public Sector, for Unisys. At the time of his participation in the preparation of this Guide, Mr. Roberts was Deputy Executive Director of the Technology and Research Division of SEARCH. Mr. Roberts provided technical assistance to justice agencies nationwide, addressing such issues as the integration of information systems and automation planning, with funding from the Bureau of Justice Assistance (BJA) and Bureau of Justice Statistics (BJS), U.S. DOJ. In addition, Mr. Roberts served as Director of an Office of Justice Programs/BJA project to identify and define information exchanges that enable integration of justice information systems at the State and local levels, and as Director of a joint BJS/Federal Bureau of Investigation project on implementation of the National Incident-Based Reporting System (NIBRS) among law enforcement agencies.

Mr. Roberts is a frequent keynote speaker at justice technology conferences and workshops across the United States and Canada, and has prepared numerous articles and reports. Mr. Roberts is a member of numerous advisory committees and professional associations, including the Criminal Justice Information Systems Committee, International Association of Chiefs of Police; the Architecture Committee, National Association of State Chief Information Officers; the Infrastructure/Standards Working Group, Global Justice Information Sharing Initiatives Advisory Committee; the Board of Directors, Legal XML; Chair, Integrated Justice Working Group, Legal XML, OASIS; and the American Society of Criminology.

Mr. Roberts holds a master's degree from the School of Criminal Justice, State University of New York at Albany; a Master of Criminal Justice Administration from Oklahoma City University; and a bachelor's degree in Law Enforcement and Criminology from Metropolitan State College in Colorado.

David C. Steelman. Mr. Steelman is a Principal Court Management Consultant with NCSC, and he served as principal author of this Guide as a project staff member for the Technology Reengineering Subcommittee. In over 28 years with the National Center, including five years as Director of the Northeastern Regional Office, he has led hundreds of projects for courts in dozens of States and six foreign countries, in such areas as court organization; trial

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From 1977-1983, Mr. Steelman was an adjunct professor in the Evening Division of Boston College. A Phi Beta Kappa undergraduate student and Ford Foundation Teaching Fellow with a master's degree in history from the University of New Hampshire, he received his law degree from the Boston University School of Law. He is admitted to the practice of law in Massachusetts and New Hampshire.

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For six years prior to joining SEARCH in 2001, Ms. Sullivan was Director for the Metro Davidson County Justice Information System, a complex, event-driven, enterprise-based system that serves the justice agencies in Nashville and Davidson County, Tennessee. In previous positions, Ms. Sullivan developed and implemented high transaction volume relational database systems for health care industry applications. Her responsibilities have included management of significant vendor (subcontractor) activities, as well as development of in-house database/application and support infrastructure.

In May 1997, Ms. Sullivan was accepted as a Fellow of the Institute of Court Management after completing the required course work for the Court Executive Development Program from NCSC. Ms. Sullivan received a J.D. from the Nashville School of Law and a bachelor's degree in Information Systems Management from Belmont College in Tennessee. She is a member of the Nashville Bar Association.

Henry K. Townsend. Dr. Townsend is Technology Operations Manager for Technology Services at NCSC. As staff to the Technology Reengineering Subcommittee during the initial stages of the project, Dr. Townsend conducted background research for the committee on the use of business process review tools and techniques in the public sector. At the National Center, Dr. Townsend manages all budget, human resource, and business development issues for the Technology Operations Group; provides software engineering and IT architecture consulting services to State, local, and international courts, and their administrative offices; and conducts information systems audits for client organizations. Dr. Townsend's extensive experience prior to joining the National Center includes 8 years in supervisory

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Dr. Townsend earned a bachelor's degree in Economics from Catawba College; an MA in Sociology (Conflict Management) from the University of North Carolina-Greensboro; an MSBA (Information Systems Audit) from California Polytechnic State University, Pomona; and a Ph.D. in Organizational Theory, Organizational Behavior, and Urban Systems from Emory University. Dr. Townsend is a graduate of the Advanced Management Program of the Information Resource Management College of the National Defense University and holds professional certification as a Certified Information Systems Auditor, Certified Information Security Manager, and a Certified Government Financial Manager.

Lawrence P. Webster. Mr. Webster is Manager of the Justice Information Exchange Model Project with SEARCH, and served as a consultant to the Technology Reengineering Committee in the development of this Guide. Prior to joining SEARCH, Mr. Webster served as Delaware's State Court Administrator; Executive Director of Court Technology Programs at NCSC; Director of Data Processing for the Utah courts; System Manager for the U.S. Attorney, District of Colorado; and Manager of Operations and Systems Development for the Colorado District Attorneys' Council. He has delivered numerous seminars, presentations, and courses and has headed or participated in research, education, and consulting projects related to technology in the justice system. He was principal author of *A Guidebook for Electronic Court Filing* and *Automating Court Systems*, and has prepared or assisted with many other books, articles, and papers on similar topics.

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