

Production Acceptance

Introduction

No matter how well designed and well tested an application may be, the first—and often lasting—impressions that users form about that application come from how successfully it is deployed into production. Developers and operations personnel sometimes let unnecessary obstacles take their eyes off the goal of a successful deployment. This chapter defines the process of production acceptance and describes many of the benefits this process provides to a variety of groups both inside and outside of IT. The middle sections of this chapter discuss each of the 14 steps required to design and implement an effective production acceptance process. The chapter closes with a case study involving the assessment of production acceptance processes for seven diverse companies.

Definition of Production Acceptance

The primary objective of systems management is to provide a consistently stable and responsive operating environment. A secondary goal is to ensure that the production systems themselves run in a stable and responsive manner. The function of systems management that addresses this challenge is production acceptance.

Production Acceptance

Production acceptance is a methodology used to consistently and successfully deploy application systems into a production environment regardless of platform.

The following key words from this definition are worth noting.

- **Consistent methodology.** While the methodology is consistent, it is not necessarily identical across all platforms. This means there are essential steps of the process that need to be done for every production deployment, and then there are other steps that can be added, omitted, or modified depending on the type of platform selected for production use.
- **Deploying into a production environment.** This implies that the process is not complete until all users are fully up and running on the new system. For large applications, this could involve thousands of users phased in over several months.
- **Application system.** This refers to any group of software programs necessary for conducting a company's business—the end-users of which are primarily, but not necessarily, in departments outside of IT. This excludes software still in development, as well as software used as tools for IT support groups.

The Benefits of a Production Acceptance Process

An effective production deployment process offers several advantages to a variety of user groups. These beneficiaries include the applications department, executive management, various groups within the IT infrastructure, customers, and suppliers (see Table 9-1).

Table 9-1 Beneficiaries and Benefits of Production Acceptance

Beneficiary	Benefits
Applications	<ol style="list-style-type: none">1. Ensures that adequate network and system capacity is available for both development and production2. Identifies desktop upgrade requirements in advance to ensure sufficient budget, resources, and time frame3. Specifies detailed hardware and software configurations of both the development and production servers to ensure identical environments are used for testing and deployment4. Ensures infrastructure support groups (systems, networks, solution center) are trained on supporting the application weeks prior to cutover
Executive Management	<ol style="list-style-type: none">1. Quantifies total ongoing support costs prior to project start-up2. Reduces overtime costs by identifying upgrade requirements early on3. Increases the likelihood of deploying production systems on schedule by ensuring thorough and timely testing
Infrastructure	<ol style="list-style-type: none">1. Identifies initial system and network requirements early on2. Identifies future infrastructure requirements enabling more cost-effective capacity planning3. Identifies ongoing support requirements early on
Customers	<ol style="list-style-type: none">1. Involves customers early in the planning phase2. Ensures customer equipment upgrades are identified early and scheduled with customer involvement3. Ensures satisfactory user testing
Suppliers	<ol style="list-style-type: none">1. Involves key suppliers in the success of the project2. Identifies and partners key suppliers with each other and with support groups3. Provides suppliers with opportunities to suggest improvements for deployment

Implementing a Production Acceptance Process

The following list details the 14 steps necessary for implementing an effective production acceptance process. Along with our detailed discussion of each of these steps, we will look at actual experiences from industry, where appropriate, to highlight suggestions to pursue and obstacles to avoid.

1. Identify an executive sponsor
2. Select a process owner
3. Solicit executive support
4. Assemble a production acceptance team
5. Identify and prioritize requirements
6. Develop policy statements
7. Nominate a pilot system
8. Design appropriate forms
9. Document the procedures
10. Execute the pilot system
11. Conduct a lessons-learned session
12. Revise policies, procedures, and forms
13. Formulate marketing strategy
14. Follow up on ongoing enforcement and improvements

Step 1: Identify an Executive Sponsor

Production acceptance is one of a handful of systems management processes that directly involve departments outside of the infrastructure group. In this case it is the applications development area that plays a key role in making this process effective. An executive sponsor is necessary to ensure ongoing support and cooperation between these two departments. Depending on the size and scope of the IT organization, the sponsor could be the CIO, the head of the infrastructure group, or some other executive in the infrastructure. (We should note that an application manager could be an excellent sponsor providing the head of the infrastructure agrees with the selection. In this case, the executives from both departments should concur on the choice of process owner, who needs to be from the infrastructure group.)

In general, the higher the level of executive sponsor, the better. It should be noted that senior executives are usually more time constrained than those at lower levels, so support sessions should be well planned, straightforward, and to the point.

The executive sponsor must be a champion of the process, particularly if the shop has gone many years with no structured turnover procedure in place. He or she needs to be able to persuade other executives both inside and outside of IT to follow the lead. This individual is responsible for providing executive leadership, direction, and support for the process. The executive sponsor is also responsible for selecting the process owner, for addressing conflicts that the process owner cannot resolve, and for providing marketing assistance.

Step 2: Select a Process Owner

One of the first responsibilities of the executive sponsor is to select the production acceptance process owner. The process owner should be a member of the infrastructure organization since most of the ongoing activities of operating and supporting a new production application fall within this group. This person will be interacting frequently with the programmers who developed and will be maintaining the system.

This continual interaction with applications makes a working knowledge of application systems an important prerequisite for the process owner. Being able to evaluate applications documentation and to communicate effectively with program developers are two additional characteristics highly recommended in a process owner. Several other medium-priority and lower-priority characteristics (see Table 9-2) assist in selecting the process lead. These attributes and priorities may vary from shop to shop, but they are intended to emphasize the importance of predetermining the traits that best suit your organization.

Table 9-2 Prioritized Characteristics for a Production Acceptance Process Owner

Characteristic	Priority
Knowledge of applications	High
Ability to evaluate documentation	High
Ability to communicate effectively with developers	High
Knowledge of company's business model	Medium
Ability to meet effectively with users	Medium
Ability to communicate effectively with IT executives	Medium
Ability to promote teamwork and cooperation	Medium

Table 9-2 Prioritized Characteristics for a Production Acceptance Process Owner
Continued

Characteristic	Priority
Ability to manage diversity	Medium
Knowledge of backup systems	Medium
Knowledge of database systems	Medium
Knowledge of desktop hardware and software	Medium
Knowledge of software configurations	Medium
Knowledge of systems software and components	Low
Knowledge of network software and components	Low
Knowledge of hardware configurations	Low

Step 3: Solicit Executive Support

Production acceptance requires much cooperation and support between the applications development and infrastructure departments. Executive support from both of these departments should be solicited to ensure that policies and decisions about the design of the process are backed up and pushed down from higher levels of management.

Step 4: Assemble a Production Acceptance Team

The process owner should assemble a cross-functional team to assist in developing and implementing a production acceptance process. The team should consist of key representatives from the development organization as well as those from operations, technical support, capacity planning, the help desk, and database administration. In cases where the development group is larger than a few hundred programmers, multiple development representatives should participate.

It is important that all key areas within development are represented on this team to ensure support and buy-in for the process. Appropriate development representatives also ensure that potential obstacles to success are identified and resolved to everyone’s satisfaction. An effective executive sponsor and the soliciting of executive support (steps 1 and 3) can help to ensure proper representation.

At one company where I managed a large infrastructure group, there were more than 400 programmers in the development department

grouped into the four areas of finance, engineering, manufacturing, and logistics. A representative from each of these four areas participated in the development of a production acceptance procedure; each brought unique perspectives, and together they helped to ensure a successful result to the process.

Step 5: Identify and Prioritize Requirements

Early in my career I participated on a number of production acceptance teams that fell short in providing an effective production turnover process. In looking for common causes for these failed attempts, I noticed that in almost every case there were no agreed-upon requirements at the start; when there were requirements, they were never prioritized.

Later on, as I led my own production acceptance design teams, I realized that having requirements that were prioritized and agreed upon by all participants added greatly to the success of the efforts. Requirements vary from company to company, but some are common to almost all instances. Table 9-3 lists some of the more common requirements I have witnessed in successful implementations of production acceptance, along with their typical priorities.

Table 9-3 Sample of Prioritized Requirements

Requirement	Priority
1. Ensure that operations, technical support, help desk, network services, and database administration are all involved early on in implementing a new application.	High
2. Ensure capacity-gathering requirements are compatible with the capacity planning process.	High
3. Provide application documentation to operations prior to production turnover.	High
4. Develop and enforce management policy statements.	High
5. Ensure adequate service desk support from applications during the first week of production.	Medium
6. Implement a pilot subset for very large applications.	Medium
7. Do not set up a separate help desk for a new application.	Medium
8. Ensure that a user test plan is developed and executed.	Medium

Table 9-3 Sample of Prioritized Requirements Continued

Requirement	Priority
9. Ensure that a user acceptance plan is developed and executed.	Medium
10. Analyze daily the types and frequencies of service desk calls during the first two weeks of production; then weekly thereafter.	Medium
11. Leverage the use of existing tools and processes.	Medium
12. Simplify forms as much as possible for ease of use.	Low
13. Involve appropriate groups in the design and approval of forms.	Low
14. Ensure that developers estimate the type and volume of service desk calls during the first week of production.	Low
15. Include desktop capacity requirements.	Low
16. For systems being upgraded, ensure that all impacts to end-users are identified up front.	Low

Step 6: Develop Policy Statements

The cross-functional team should develop policy statements for a production acceptance process. These statements should then be approved by the executive sponsor. Policy statements help ensure that issues such as compliance, enforcement, and accountability will be supported by senior management and communicated to the applicable levels of staffs. The following lists some sample policy statements:

1. All new mainframe- or server-based applications are to go through the formal production acceptance process prior to deployment into production.
2. All major new versions of existing production applications are to go through the formal production acceptance process prior to deployment into production.
3. Process owner ([insert name]) is responsible for coordinating and maintaining the production acceptance process and has authority to delay an application’s deployment into production pending full compliance with the process.
4. Key support groups such as operations, technical support, network services, database administration, and the help desk are to be informed about the application from its start and involved

with its development as prescribed by the production acceptance process.

5. Development owners of applications that are deployed through the production acceptance process are expected to regularly update the capacity plan for their applications to ensure adequate resource support in the future.
6. Any applications deployed through the production acceptance process that require substantial desktop capacity upgrades are to provide specific requirements to capacity planners with sufficient lead time for planning, ordering, delivering, and installing all upgrades.

Pilot System

A pilot system is a small-scale version of an application used to try out new processes, functions, or features associated with the application. A single purchasing module of a comprehensive enterprise-wide financial system is an example of a pilot system.

Step 7: Nominate a Pilot System

When a production acceptance process is designed and implemented, particularly in environments that have never had one, there is normally a major change in the manner in which application systems are deployed. Therefore, it is usually more effective to introduce this new method of production turnover on a smaller scale with a minimal-impact pilot system. If a small system is not available as a pilot, consider putting only an initial portion of a major system through the new process.

Step 8: Design Appropriate Forms

During the requirements step, the cross-functional team normally discusses the quantity, types, and characteristics of forms to be used with a production acceptance process. The following list details some of the forms that are typically considered here. Some shops elect to combine some or all of these forms, depending on their complexity.

1. Primary production acceptance form
 2. Capacity planning form
 3. Customer-acceptance form
 4. Service desk form
 5. Testing plan
 6. Lessons-learned form
- The capacity form is for periodic updates to resource requirements.
 - The customer-acceptance form is for user feedback prior to deployment.
 - The service desk form is for anticipated calls during start-up.
 - The test plan is for developers to show function and performance of the new system.
 - The lessons-learned form is for follow-up and improvements after full deployment of a new system.

The forms are proposed, designed, and finalized by the team. Figure 9-1 shows a production acceptance form used by one of my clients. Specific requirements of the form vary from shop to shop, but the form should always be simple, thorough, understandable, and accessible. Many shops today keep forms like these online via their company intranets for ease of use and access.

Step 9: Document the Procedures

The documentation of any systems management process is important, but it is especially so in the case of production acceptance because such a large number of developers will be using it. The documentation for these procedures must be effective and accessible (see Chapter 20 for ways to ensure that documentation is both of high quality and of high value).

Step 10: Execute the Pilot System

With a pilot system identified, forms designed, and procedures in place, it is time to execute the pilot system. User testing and acceptance plays a major role in this step, as does the involvement of support groups such as technical support, systems administration, and the help desk.

Production Acceptance Request Form

Part One: Actions Required at Time of Project Approval

I. General Information about the Application

A. Customer/Supplier Information (To be completed by the Project Manager)

Full system name/acronym _____
 Brief description of the system: _____

Current Date _____ Planned Pilot Date _____ Full Deployment Date _____
 Risk Assessment and Analysis _____

Mission Critical: Yes _____ No _____ Prty: A _____ B _____
 Prim Proj Mgr _____ Alt Proj Mgr _____ IT Dept _____
 Prim Cust Contact _____ Alt Cust Contact _____ Cust Dept _____
 Prim Ops Support _____ Alt Ops Support _____ Soln Ctr Rep _____

B. Service Level Information (To be completed by the Project Manager)

Tech Ctr Hrs of Oprtn _____ Soln Ctr Hrs of Oprtn _____ Monitoring Hrs: _____
 Expected prime-shift % avail/wk: _____ Expected off-shift % avail/wk: _____
 For _____ type transactions, expected response time is _____
 For _____ type transactions, expected response time is _____
 Batch requirements: _____

C. Minimum System Requirements (To be completed by the Project Manager)

DB System _____ Appl Vendor (if applicable) _____ Appl _____
 Lang _____ Server Platform: _____ Client Platform: _____

D. Actual Development and Production Environment (To be completed by the Manager of Systems Administration)

DB System, Ver/Rel _____ Appl Vendor, Ver/Rel (if applicable) _____
 Server O/S Ver/Rel: _____ Dev Hostname _____ Prod Hostname _____
 List any dependencies between server O/S, DB, and appl ver/rel _____
 List any differences between Dev & Prod server, O/S, DB, appl, utilities, etc. _____

E. Local Area Network Architecture (To be completed by the Manager of Network Operations)

Server Topology Required (10BaseT/100BaseT/FDDI/GB-Fiber/Other): _____
 Client Topology Required (10BaseT/100BaseT/FDDI/GB-Fiber/Other): _____
 Protocols Required (TCP/IP/Other): _____ Estimated Bandwidth: _____
 Ntwk Class: On-air _____ Business _____ Internet Access (Yes/No) _____
 Prod Loc: Data Ctr _____ Other _____ Switch Location: _____

F. Wide Area Network Architecture (To be completed by the Manager of Network Operations)

Comments _____

G. Remote Network Access (To be completed by the Manager of Network Operations)

Remote access needed (Yes/No) _____ Method of Connectivity _____
 Comments _____

Figure 9-1 Sample Production Acceptance Form (page 1 of 3)

II. Capacity, Support, and Costs		Time at Start-Up	6 Mos after Start-Up	12 Mos after Start-Up	
A. Application Usage Information (To be completed by the Project Manager)					
1. Concurrent LAN users					
2. Total LAN users					
3. Concurrent WAN users					
4. Total WAN users					
5. Concurrent remote users					
6. Total remote users					
7. Total concurrent users (sum of 1,3,5)					
8. Total overall users (sum of 2,4,6)					
B. Application Resource Information (To be completed by the Project Manager)					
1. Disk storage (GB)					
2. New/upgraded desktops					
3. Peak update transactions/hour					
4. Peak inquiry transactions/hour					
5. Peak data throughput/hour					
6. Avg. data throughput/hour					
C. Technical Center Capacity Requirements (To be completed by the Manager of Systems Administration)					
1. Additional server required					
2. Type of server required					
3. Server processor upgrades					
4. Server memory upgrades					
5. Server software upgrades					
6. Disk resource upgrades					
7. Tape resource upgrades					
8. Backup media required					
9. Physical floor space					
10. Racks, cabinets, furniture					
11. Facilities (electrical, a/c, etc.)					
D. Operations Support Requirements (To be completed by the Manager of Systems Administration)					
1. FTE Computer Operator					
2. FTE Systems Administrator					
3. FTE Database Administrator					
4. FTE Network Operator					
5. FTE Call Center Analyst					
Project Manager	Date	Customer Contact	Date	Primary Operations Support	Date
Systems Administrators Manager	Date	Network Operations Manager	Date	Solution Center Manager	Date

Figure 9-1 Sample Production Acceptance Form (page 2 of 3)

Part Two: Actions Required during Month Prior to Start-Up

I. <u>Documentation from Applications</u> (From Project Manager)	In			N/A
	No	Progress	Yes	
System Architecture Diagram	_____	_____	_____	_____
System Flow Diagram	_____	_____	_____	_____
Operator Run Instructions	_____	_____	_____	_____
Backup Requirements	_____	_____	_____	_____
Disaster Recovery Requirements	_____	_____	_____	_____
Project Plan with all current infrastructure tasks	_____	_____	_____	_____
User Acceptance Test Plans	_____	_____	_____	_____
User Guide	_____	_____	_____	_____
DBA Documents (data model, dictionary, scripts, etc.)	_____	_____	_____	_____
II. <u>Status of Testing</u> (From Project Manager)				
A. Unit Tests	_____	_____	_____	_____
B. Systems Tests	_____	_____	_____	_____
C. Integration Tests (when applicable)	_____	_____	_____	_____
D. Regression Tests (when applicable)	_____	_____	_____	_____
E. Stress Tests	_____	_____	_____	_____
F. User Acceptance Tests	_____	_____	_____	_____
G. Parallel Tests	_____	_____	_____	_____
III. <u>Training Plans</u> (From Project Manager)				
A. Operations Support Training	_____	_____	_____	_____
B. Solution Center Training	_____	_____	_____	_____
C. User Training	_____	_____	_____	_____

Project Manager

Date

Customer Contact

Date

Primary Operations Support

Date

Part Three: Actions Required during Week Prior to Start-Up

I. Documentation Follow-Up

- A. Review, correct, and update as needed

II. Execution of Training Plans

- A. Operator Training
B. Call Center Training
C. User Training

III. Service Level Agreements

- A. Signed Service Level Agreements with Customers and Operations Support

Project Manager

Date

Customer Contact

Date

Primary Operations Support

Date

Figure 9-1 Sample Production Acceptance Form (page 3 of 3)

Step 11: Conduct a Lessons-Learned Session

In this step, the process owner conducts a thorough, candid lessons-learned session with key participants involved in executing the pilot system. Participants should include representatives from the user community, development area, support staff, and help desk.

Step 12: Revise Policies, Procedures, and Forms

The recommendations resulting from the lessons-learned session may include revisions to policies, procedures, forms, test plans, and training techniques for users and support staff. These revisions should be agreed to by the entire cross-functional team and implemented prior to full deployment.

Step 13: Formulate Marketing Strategy

Regardless of how thoroughly and effectively a cross-functional team designs a production acceptance process, the process does little good if it is not supported and applied by development groups. Once the final policies, procedures, and forms are in place, the process owner and design team should formulate and implement a marketing strategy. The marketing plan should include the benefits of using the process; the active support of the executive sponsor and peers; examples of any quick wins as evidenced by the pilot system; and testimonials from users, service desk personnel, and support staff.

Step 14: Follow-up for Ongoing Enforcement and Improvements

Improvement processes such as production acceptance often enjoy much initial support and enthusiasm, but that is sometimes short-lived. Changing priorities, conflicting schedules, budget constraints, turnover of staff or management, lack of adequate resources, and a general reluctance to adopt radically new procedures all contribute to the de-emphasis and avoidance of novel processes. One of the best ways to ensure ongoing support and consistent use is to follow up with reviews, post-mortems, and lessons learned to constantly improve the overall quality, enforcement, and effectiveness of the process.

Full Deployment of a New Application

By this point, the production acceptance process should be designed, approved, documented, tested, and implemented. So when does the new application become deployed? The answer is that the process of developing the process does not specifically include the deployment of a new application. When the production acceptance process is applied, it will include the use of a form such as the one previously described in Figure 9-1, which includes all of the activities leading up to the actual deployment. In other words, if all of the tasks outlined by the form in Figure 9-1 are completed on time for any new application, its successful deployment is all but guaranteed.

One of the key aspects of this entire process is the involvement of the infrastructure group early on. The development manager who owns the new application should notify and involve the production acceptance process owner as soon as a new application is approved. This ensures infrastructure personnel and support staff are given adequate lead time to plan, coordinate, and implement the required resources and training prior to deployment. Just as important are the follow-up and lessons-learned portions of the process, which usually occurs two to three weeks after initial deployment.

Real Life Experience—Celebrating Process Independence Every Day

The IT department of a company offering satellite services to residential users contracted with a consultant to implement a production acceptance process. They selected a financial module of PeopleSoft as their perfect pilot. Everything went flawlessly and the team consisting of the project manager, developers, operations, and other support groups celebrated their modest success. Two months later, several additional modules of PeopleSoft were planned to be installed. But the CIO and development manager had now both moved on and their replacements did not see the immediate value in a production acceptance process. Without it, the implementation of the three additional modules took far longer, and with far more disruption, than the original pilot module.

The new CIO and development manager eventually agreed to follow the process for all future production application implementations. But it came at a price. The original consultant had moved on to his next client and was

unavailable for a short follow-up. The development group was familiarized with the original production acceptance process, but it took longer and cost more than if it had been followed through from the start. The important lesson learned here was to commit to a new process for the long-haul, and to make it independent of key personnel changes.

Distinguishing New Applications from New Versions of Existing Applications

Users of a new process understandably will have questions about when and how to apply it. One of the most frequent questions I hear asked about production acceptance is: Should it be used only for new applications, or is it for new versions of existing applications as well? The answer lies in the overall objective of the process, which is to consistently and successfully deploy application systems into production.

A new version of an existing application often has major changes that impact customers and infrastructure groups alike. In this case, deploying it into production is very similar to deploying a new application. Test plans should be developed, customer acceptance pilots should be formulated, and capacity requirements should be identified well in advance. The guideline for deciding when to use production acceptance is this: Determine how different the new version of the system is from its predecessor. If users, support staff, and service desk personnel are likely to experience even moderate impact from a new version of an existing application, then the production acceptance process should be used.

Distinguishing Production Acceptance from Change Management

Another question I frequently hear is: How does one distinguish production acceptance from change management, since both seem to be handling software changes? The answer is that production acceptance is a special type of change that involves many more elements than the typical software modification. Capacity forecasts, resource requirements, customer sign-off, service desk training, and close initial monitoring by developers are just some of the usual aspects of production acceptance

that are normally not associated with change management. The other obvious difference between the two processes is that, while production acceptance is involved solely with deploying application software into production, change management covers a wide range of activities outside of production software, such as hardware, networks, desktops, and facilities.

Case Study: Assessing the Production Acceptance Process at Seven Diverse Companies

All the theory in the world about designing world-class infrastructures is of little use if it cannot be applied to real-life environments. In this section, I present real-life applications of infrastructure processes in general and applications of the production acceptance process in particular. All of the material in this part of the book is taken from work involving the production acceptance process that I performed in recent years at seven separate companies. The companies vary significantly in size, age, industry, orientation, and IT maturity. As a result, they offer a wide diversity of real-life experiences in how companies recognize, support, and improve the quality of their production acceptance environments.

In addition to the general company attributes previously mentioned, this initial part of the case study describes several key IT characteristics of each firm. This is to show both the amount and range of diversity among these organizations. I then discuss each company in more detail with emphasis on its particular strengths and weaknesses in its approach to infrastructure processes. Included in this section is a unique feature of this book: a completed assessment worksheet measuring the relative quality and robustness of each company's production acceptance process. The last part of this section summarizes and compares the attributes, relative strengths, weaknesses, and lessons learned from each of the seven companies studied.

The Seven Companies Selected

These seven companies were selected based on my familiarity with each one either as a client of my professional services or as a client whose infrastructure I personally managed. It is fortunate that these companies provided such a wide variety of IT environments. To gain further insight

from studying the relative strengths and weaknesses of numerous production acceptance processes, it is helpful to draw from a variety of IT environments.

The seven companies studied here could not have been more diverse. They each consisted primarily of one of the four major platform environments: mainframe, midrange, client/server, or web-enabled. No two were in the same industry. They covered a wide spectrum of businesses that included aerospace, broadcast content, motion pictures, defense contracting, dotcom e-tailor, broadcast delivery, and financial services.

The age of the oldest company, 50 years, was more than 10 times the age of the youngest one. Even more striking was the variation by a factor of 1,000 from the largest number of total employees (and the number of IT employees specifically) to the smallest. Despite the diversity of these companies, they all had production applications to deploy, operate, maintain, and manage. They all shared a common production goal to run these systems as reliably and as efficiently as possible. The degree to which they accomplished that goal varied almost as widely as the environments that described them. Studying what each company did well or not so well when managing its applications provides important lessons as to how to implement a truly world-class production services department.

Types of Attributes

In setting out to study and analyze the production services function of these companies, I first identified attributes of each company that fell into one of three categories: business-oriented, IT-oriented and production services-oriented. The following characteristics were associated with each category.

Business-oriented attributes:

- Type of industry of the company
 - Manufacturing
 - High technology
 - Entertainment
 - Services

- Total number of its employees at the time of the study
 - Largest had 80,000 workers
 - Smallest had 75
 - Average number was 17,300
- Number of years it had been in business
 - Oldest was 70 years
 - Youngest was 4 years
 - Average was 31 years

IT-oriented attributes:

- Number of IT workers
 - Largest had 2000 employees
 - Smallest had 25 employees
 - Average was 457 employees
- Number of processors by platform
- Number of desktops

Production services-oriented attributes:

- Total number of applications in production
- Number of production applications deployed per month
- Existence of a production services department
- To which group the production services department reported

The largest IT department in our sample skews the data slightly since the average is a more reasonable 200 with it removed.

Table 9-4 lists all of these attributes for each of the seven companies. We identify these seven firms simply as Company A, Company B and on through Company G. A few observations are worth noting aside from the obvious diversity of the companies. One is that the size of the company does not necessarily dictate the size of the IT department. For example, Company A has 80,000 employees, with 400 of them in IT; Company D has 30,000 workers, with 2,000 of them in IT. This is because Company A has many manufacturing workers not directly tied to IT, whereas Company D has major defense programs requiring huge investments in IT.

Table 9-4 Summary Comparison of Case Study Companies

Attribute	Company A	Company B	Company C	Company D	Company E	Company F	Company G
Industry:	Aerospace	Broadcast content	Motion pictures	Defense contractor	Dot-com e-tailor	Broadcast delivery	Financial services
Number of Employees:	80,000	1,500	3,000	30,000	75	4000	2,500
Age of Company:	50	15	70	60	4	10	8
Employees Within IT:	400	125	200	2,000	25	300	150
Mainframes:	4	0	0	8	0	2	0
(Midranges):	4	0	2	10	0	2	0
(Servers)	4	40	50	20	10	30	200
Desktops	1,200	600	2,000	5,000	80	1,800	1,500
# of Prod. Applications	350	125	150	500	25	700	250
Applications Deployed/Month:	2	2	3	4	1	3	5
Prod. Services Dept.:	Yes	No	No	Yes	No	Yes	No
Dept. to Which PS Reported:	Ops	N/A	N/A	Ops	N/A	Application Support	N/A
Quality Assurance Dept.:	No	No	Yes	Yes	No	Yes	Yes
Dept. to Which QA Reported:	N/A	N/A	Enterprise Planning	Apps Dev.	N/A	Apps Dev.	Apps Dev.
Change Mgmt. Formality	Medium	Low	Medium	High	None	Low	None
Prod. Acceptance Formality	Medium	None	Low	High	None	None	None

We will next look at each of the seven companies in more detail, focusing on their use, or non-use, of a production services function. We will also discuss each IT organization's relative strengths and weaknesses and what they learned from their experiences with attempting to implement robust infrastructure processes.

Company A

Company A is a large, well-established aerospace firm. The company is more than 50 years old and enjoys a reputation for researching, developing, and applying cutting-edge technology for both the military and commercial sectors. At the time of our assignment, it employed 80,000 workers—of whom 400 resided in IT. The IT platform environment of its main corporate computer center consisted primarily of four huge mainframes, with the same number of midrange computers and servers and approximately 1,200 desktops.

The IT operations department of Company A had a well-established production services function that ran 350 production applications daily (slightly more during month-end processing) and deployed on average two new production applications per month. There was no quality-assurance group at this company, although they did have the beginnings of a formal change management and production acceptance process.

The production services department was staffed by two very competent individuals who thoroughly knew the ins and outs of running virtually every production application in the company, though little of it was documented. They were very technically knowledgeable, as was most all of the staff in IT. This reflected part of the company's mission to develop highly technical expertise throughout the enterprise. Another part of the company's mission was to dedicate every department to continuous process improvement. The production services function was still very manually oriented and consequently somewhat inefficient. No automated scheduling systems were in place here at this time, but the company was willing to try new techniques and try new technologies to improve their processes.

Production services was also very segregated from other processes, such as change and problem management. There was only the start of a production acceptance process, which was not tied to production services at all. This segregation occasionally strained communications between operations and applications development. The fact that they were 25 miles apart sometimes added to the lack of face-to-face meetings.

Operations did a good job of collecting meaningful metrics such as outages, abnormal terminations, reruns, reprints, and reports delivered

on time. There was an inconsistent emphasis on how often or how deeply their metrics should be analyzed, which sometimes undermined their usefulness.

To summarize Company A's strengths, they were willing to try new techniques and new technologies, they committed to continuous process improvement, they hired and developed a technically competent staff, and they were willing to collect meaningful metrics. To summarize their weaknesses, they tended to not interact with members of other IT staffs, they provided little documented training, they did not always have effective communications with the development group (due, in part, to a 25-mile separation), and they did not always analyze the metrics they collected.

Eventually, the operations department implemented a more formal production acceptance process. One of the most important lessons we learned was to ensure the operations department was involved very early with a new application project. This helps ensure that the appropriate operation's group provides or receives the proper resources, capacity, documentation, and training required for a successful deployment. The other important lesson we learned was that the other infrastructure support groups (such as network services, the help desk, storage management, and desktop applications) need to provide their full support to the production services function. Because this function had worked in an isolated manner in the past, other infrastructure support groups were initially reluctant to support it. They eventually did as improved processes, automation, and increased communication became more prevalent.

The nonweighted worksheet shown in Figure 9-2 presents a quick-and-simple method for assessing the overall quality, efficiency, and effectiveness of the production acceptance process at Company A. As mentioned previously, one of the most valuable characteristics of a worksheet of this kind is that it can be customized to evaluate each of the 12 processes individually. The worksheet in the following sections of this chapter applies only to the production acceptance process for each of the seven companies studied. However, the fundamental concepts applied in using these evaluation worksheets are the same for all 12 disciplines. As a result, the detailed explanation on the general use of these worksheets presented near the end of Chapter 7 also applies to the other worksheets in the book. Please refer to that discussion if you need more information on how weights are computed.

Process owners and their managers collaborate with other appropriate individuals to fill out this form. Along the left-hand column are 10 categories of characteristics about a process. The degree to which each of these characteristics is put to use in designing and managing a process is a good measure of its relative robustness.

Production Acceptance Process - Assessment Worksheet					
Process Owner: Employee A		Owner's Manager: Manager A		Date: N/A	
Category	Questions About Production Acceptance	None 1	Small 2	Medium 3	Large 4
Executive Support	To what degree does the executive sponsor show support for the production acceptance process with actions such as engaging development managers and their staffs in this process?			3	
Process Owner	To what degree does the process owner exhibit desirable traits and understand application development and deployment?				4
Customer Involvement	To what degree are key customers, especially from development, operations and the help desk, involved in the design and use of the process?		2		
Supplier Involvement	To what degree are key suppliers, such as 3 rd party vendors, trainers and technical writers, involved in the design of the process?			3	
Service Metrics	To what degree are service metrics analyzed for trends such as the amount of positive feedback from users and the number of calls to the help desk, immediately after deployment?		2		
Process Metrics	To what degree are process metrics analyzed for trends such as the frequency and duration of delays to deployment and the accuracy and timeliness of documentation and training?	1			
Process Integration	To what degree does the production acceptance process integrate with other processes and tools such as change management and problem management?	1			
Streamlining/ Automation	To what degree is the production acceptance process streamlined by automating actions such as the documentation of a new application and online training for it by means of the intranet?	1			
Training of Staff	To what degree is the staff cross-trained on the production acceptance process, and how well is the effectiveness of the training verified?	1			
Process Documentation	To what degree is the quality and value of production acceptance documentation measured and maintained?		2		
Totals		4	6	6	4
Grand Total = 20					
Assessment Score = 20/40 = 50%					

Figure 9-2 Assessment Worksheet for Company A

The categories that assess the overall quality of a process are executive support, process owner, and process documentation. Categories assessing the overall efficiency of a process consist of supplier involvement, process metrics, process integration, and streamlining/automation. The categories used to assess effectiveness include customer involvement, service metrics, and the training of staff.

The evaluation of each category is a very simple procedure. The relative degree to which the characteristics within each category are present and being used is rated on a scale of 1 to 4, with 1 indicating no or barely any presence and 4 representing a large presence of the characteristic. For example, at this particular company, the executive sponsor for the production acceptance process demonstrated some initial support for the process by carefully selecting and coaching the process owner. However, over time, this same executive showed only mild interest in engaging all of the necessary development managers and staffs in the process. We consequently rated the overall degree to which this executive showed support for this process as small, giving it a 3 on the scale of 1 to 4. On the other hand, the process owner was extremely knowledgeable on all of the critical applications and their deployments, so we rated this category a 4.

We similarly rated each of the categories as shown in Figure 9-2. Obviously, a single column could be used record the ratings of each category; however, if we format separate columns for each of the four possible scores, categories scoring the lowest and highest ratings stand out visually. The next step is to sum the numerical scores within each column. For Company A, this totals to $4 + 6 + 6 + 4 = 20$. This total is then divided by the maximum possible rating of 40, for an assessment score of 50 percent.

Company B

Company B is a satellite broadcast venture featuring informational programming. It is a relatively young firm at 15 years old. When it began, the technology of digital informational broadcasting was in its early refinement stages. This, among other reasons, resulted in them being very willing to employ cutting-edge technology. They did this almost to a fault, using very advanced but questionably tested technology at the outset for their satellites. They learned from their experiences, improved

their technology, and eventually applied to their IT department by implementing cutting-edge but proved infrastructure processes.

Company B employs 1,500 workers, of whom 125 resided in IT. Their IT platform environment consists of 40 servers and approximately 600 desktops. There was no production services function at Company B nor was there a quality assurance group. They ran 125 production applications daily and deployed on average two new production applications per month. There was only a start of a change management process and no production acceptance process.

With the company poised to implement major enterprise applications, senior IT management realized they needed a formal production acceptance process. While preferring to do the work with their own staffs, they acknowledged limited in-house process expertise and hired professional consultants to run a pilot program. The IT executives were also very helpful in supplying qualified staff members from both applications development and operations to support the pilot program.

Since this was the first formal implementation of any infrastructure process, there was no integration to other processes and no immediate plans to do so. While applications development was extremely helpful in designing the production acceptance process and testing it with a perfect pilot application, they did not provide adequate training and documentation to the operations help desk. This was partly due to a re-shuffling of applications priorities, which also delayed the implementation of the process with a fully deployed application.

In summary of Company B's strengths, they saw the need for professional support for designing a Production Acceptance processes, they started out with pilot programs, and they staffed the pilot programs with qualified staff. For their weaknesses, the company did not provide adequate training and documentation to the help-desk group for their pilot program; they allowed support for the production acceptance process to weaken.

In a manner similar to that described for Company A, we performed an initial assessment of the production acceptance environment for Company B (see Figure 9-3). Their points totaled 18, for a final assessment score of 45 percent.

Production Acceptance Process - Assessment Worksheet					
Process Owner: Employee B		Owner's Manager: Manager B		Date: N/A	
Category	Questions About Production Acceptance	None 1	Small 2	Medium 3	Large 4
Executive Support	To what degree does the executive sponsor show support for the production acceptance process with actions such as engaging development managers and their staffs in this process?			3	
Process Owner	To what degree does the process owner exhibit desirable traits and understand application development and deployment?			3	
Customer Involvement	To what degree are key customers, especially from development, operations, and the help desk, involved in the design and use of the process?		2		
Supplier Involvement	To what degree are key suppliers, such as 3 rd party vendors, trainers, and technical writers, involved in the design of the process?		2		
Service Metrics	To what degree are service metrics analyzed for trends such as the amount of positive feedback from users and the number of calls to the help desk, immediately after deployment?	1			
Process Metrics	To what degree are process metrics analyzed for trends such as the frequency and duration of delays to deployment and the accuracy and timeliness of documentation and training?	1			
Process Integration	To what degree does the production acceptance process integrate with other processes and tools such as change management and problem management?	1			
Streamlining/ Automation	To what degree is the production acceptance process streamlined by automating actions such as the documentation of a new application and online training for it by means of the intranet?	1			
Training of Staff	To what degree is the staff cross-trained on the production acceptance process, and how well is the effectiveness of the training verified?		2		
Process Documentation	To what degree is the quality and value of production acceptance documentation measured and maintained?		2		
Totals		4	8	6	0
Grand Total = 18					
Assessment Score = 18/40 = 45%					

Figure 9-3 Assessment Worksheet for Company B

Company C

Our third company is one of the seven major motion picture studios in southern California. Studios in Hollywood tend to be an interesting paradox. On the one hand, they are some of the most creative companies for which one could ever hope to work. This applies to the writing, directing, acting, special effects, and other artistic pursuits that go into the production of a major motion picture. But when it comes to the traditional, administrative support of the company, they are as conservative as can be. This was especially true in their IT departments, and Company C was certainly no different in this regard. By the late 1990s, its IT department needed to be significantly upgraded to meet aggressive new business expansions.

Company C employs 3,000 workers, of whom 200 resided in IT. Their IT platform environment consists of two key midrange computers, 50 servers, and approximately 2,000 desktops. The company outsourced its mainframe processing, which still runs many of its core financial systems. There was no production services function at Company C, but there was a quality-assurance department that reported to an enterprise-planning group. Operations ran 150 production applications daily and deployed on average three new production applications per month. There was a formal, though not robust, change management process and an informal production acceptance process.

The IT executives at Company C conducted a studio-wide business assessment and determined that its current IT architecture would not support the future growth of the company. Many of the IT business systems would have to be upgraded or replaced and there would have to be a major overhaul of the IT infrastructure and its processes to support the new application environment. Among the processes needing improving was production acceptance. IT managers recognized the need and the opportunity to re-engineer their systems development life cycle (SDLC) methodology at the same time, and they committed the resources to do so. Software suppliers played key roles in these upgrades and re-engineering efforts. Managers also ensured that users, both internal and external to IT, received sufficient training on these new processes.

The IT quality assurance group at Company C worked closely with operations and developers in chartering a productions services function and in designing a production acceptance process. Since QA reported to the applications development department, IT executives elected to have the production services function report to them as well. This proved to be problematic in that the infrastructure group was often excluded from key deployment decisions. Another result of this arrangement was that it

provided little documentation or training to the service desk and computer operations teams.

Summing up Company C's strengths, they recognized the need to upgrade their antiquated processes, they committed resources to re-engineer the SDLC process, and they provided considerable training to users on new processes. As to their weaknesses, they did not involve the infrastructure when designing the production acceptance process, they moved the control of production acceptance into applications development and out of operations, and they provided little or no training and documentation for the help desk and operations.

Eventually, the production services function became little more than an extension of the QA department, which still reported to applications development. As a result, although the company did now have a production acceptance process in place, the lack of infrastructure ownership of it made it less robust and less effective. The key lesson learned here was that IT executives must ensure that operations control the production acceptance process and that development be involved in the process design from the start.

Similar to the previous companies, we performed an initial assessment of the production acceptance environment for Company C (see Figure 9-4). Their points totaled 19, for a final assessment score of 48 percent.

Company D

This company is a major defense contractor which has supplied major weapons systems to the United States and foreign governments for more than 60 years. Its customers are primarily the five branches of the U.S. armed forces and secondarily the militaries of foreign governments. The company manages both classified and non-classified programs, putting an additional premium on fail-safe security systems. It also supplies limited commercial aviation products.

At the time of our involvement, Company D employed 30,000 workers, of whom 2,000 resided in IT. Their IT platform environment consists of eight mainframes, 10 midrange computers, 20 servers, and 5,000 desktops. There was a relatively formal production services function at Company D that reported to operations and a quality-assurance group that reported to applications development. They ran 500 production applications daily (dozens more on weekends) and deployed on average four new production applications per month. The company had very formal change management and production acceptance processes and was very committed to the practices of total quality and continuous process improvement.

Production Acceptance Process - Assessment Worksheet					
Process Owner: Employee C		Owner's Manager: Manager C		Date: N/A	
Category	Questions About Production Acceptance	None 1	Small 2	Medium 3	Large 4
Executive Support	To what degree does the executive sponsor show support for the production acceptance process with actions such as engaging development managers and their staffs in this process?		2		
Process Owner	To what degree does the process owner exhibit desirable traits and understand application development and deployment?		2		
Customer Involvement	To what degree are key customers, especially from development, operations, and the help desk, involved in the design and use of the process?		2		
Supplier Involvement	To what degree are key suppliers, such as 3 rd party vendors, trainers, and technical writers, involved in the design of the process?			3	
Service Metrics	To what degree are service metrics analyzed for trends such as the amount of positive feedback from users and the number of calls to the help desk, immediately after deployment?	1			
Process Metrics	To what degree are process metrics analyzed for trends such as the frequency and duration of delays to deployment and the accuracy and timeliness of documentation and training?	1			
Process Integration	To what degree does the production acceptance process integrate with other processes and tools such as change management and problem management?	1			
Streamlining/ Automation	To what degree is the production acceptance process streamlined by automating actions such as the documentation of a new application and online training for it by means of the intranet?		2		
Training of Staff	To what degree is the staff cross-trained on the production acceptance process, and how well is the effectiveness of the training verified?			3	
Process Documentation	To what degree is the quality and value of production acceptance documentation measured and maintained?		2		
Totals		3	10	6	0
Grand Total = 19					
Assessment Score = 19/40 = 48%					

Figure 9-4 Assessment Worksheet for Company C

The company also emphasized the use and analysis of meaningful metrics. By meaningful, we mean metrics that our customers and our suppliers can both use to improve the level of our services. One of the most refreshing aspects of this company was their support of our prescribed process improvement sequence of integrating first, standardizing second, streamlining third, and automating last.

As with many government defense contractors, Company D found itself rushing to meet program milestones and this sometimes undermined infrastructure processes such as production acceptance. High-priority projects were allowed to bypass the process to meet critical deadlines. Plans to streamline and automate the production acceptance process became a victim of unfortunate timing. Just as they were about to be put into place, cutbacks in personnel prevented the plans from being implemented. Subsequent mergers and acquisitions brought about some temporary turf wars that further delayed the standardization of processes across all divisions.

To summarize Company D's strengths, they were committed to total quality and continuous process improvement criteria, they were committed to doing excellent analysis of metrics, and they were striving sequentially to integrate, standardize, streamline, and then automate processes. To summarize their weaknesses, they were undermining the production acceptance process by rushing to meet deadlines, they were allowing high-priority projects to bypass the process, they were not allowing the process to be streamlined due to cutbacks, and they were experiencing occasional turf wars between IT departments.

Eventually, the standardization, streamlining, and automating of processes did occur among departments and across divisions and remote sites, and it brought with it significant operation and financial benefits. The standardization also helped facilitate future company acquisitions and the merging of remote sites.

As we did with our prior companies, we performed an initial assessment of the production acceptance environment for Company D (see Figure 9-5). They scored one of the highest initial assessments we had ever seen. Their points totaled 33, for a final assessment score of 83 percent.

Production Acceptance Process - Assessment Worksheet					
Process Owner: Employee D		Owner's Manager: Manager D		Date: N/A	
Category	Questions About Production Acceptance	None 1	Small 2	Medium 3	Large 4
Executive Support	To what degree does the executive sponsor show support for the production acceptance process with actions such as engaging development managers and their staffs in this process?			3	
Process Owner	To what degree does the process owner exhibit desirable traits and understand application development and deployment?				4
Customer Involvement	To what degree are key customers, especially from development, operations, and the help desk, involved in the design and use of the process?				4
Supplier Involvement	To what degree are key suppliers, such as 3 rd party vendors, trainers, and technical writers, involved in the design of the process?			3	
Service Metrics	To what degree are service metrics analyzed for trends such as the amount of positive feedback from users and the number of calls to the help desk, immediately after deployment?			3	
Process Metrics	To what degree are process metrics analyzed for trends such as the frequency and duration of delays to deployment and the accuracy and timeliness of documentation and training?			3	
Process Integration	To what degree does the production acceptance process integrate with other processes and tools such as change management and problem management?		2		
Streamlining/ Automation	To what degree is the production acceptance process streamlined by automating actions such as the documentation of a new application and online training for it by means of the intranet?				4
Training of Staff	To what degree is the staff cross-trained on the production acceptance process, and how well is the effectiveness of the training verified?				4
Process Documentation	To what degree is the quality and value of production acceptance documentation measured and maintained?			3	
Totals		0	2	15	16
Grand Total = 33					
Assessment Score = 33/40 = 83%					

Figure 9-5 Assessment Worksheet for Company D

Company E

Our next company is a dot-com victim, but fortunately not a casualty. Like many dot-com start-ups before it, this company began with a simple idea. The idea was to offer pop culture merchandise from television, motion pictures, sports, and other forms of entertainment. It had been in existence barely four years and was poised for significant growth. A shrinking national economy coupled with fierce competition on the Internet forced dramatic cutbacks in the company. It did survive, but on a much smaller scale.

Company E employs 75 workers, of whom 25 resided in IT. Their IT platform environment consists of 10 servers and 80 desktops. There was no production services function at Company E nor was there a quality-assurance group. They ran 25 production applications daily and deployed on average one new production application per month. The initial priorities of the company were to get their website up and operational and to start producing revenue. As a result, there was no change management or production acceptance processes in place. As the company started to grow, the need for these processes became more apparent.

Since the company was starting with a clean slate, there were no previous processes to undo, replace, or re-engineer. There were many young, energetic individuals who were eager to learn new skills and methods. The relatively small profile of applications meant that we had a large number from which to select for a pilot program. A willing staff and a select group of pilot applications could not overcome the problems and changing priorities of the company's rapid growth. Just as a process was about to be implemented, a new crisis would arise, putting the new procedure on hold.

A larger challenge common to many dot-com companies was the culture clashes that arose between the entrepreneurial spirit of those behind the company's initial success and the more disciplined approach of those charged with implementing structured processes into the environment. The clash was especially evident between the technical gurus who were used to having free reign when deploying new applications, installing upgrades, or making routine maintenance changes. Those of us tasked with implementing infrastructure processes spent a fair amount of time negotiating, compromising, and marketing before achieving some positive results.

In summarizing Company E's strengths, they were a high-energy start-up with no prior processes needing to be re-engineered, they had

only a small profile of existing applications with many new ones planned (allowing for a number of pilot programs), and they had a young staff eager to learn new methods. For their weaknesses, their rapid growth hindered the use of processes, their entrepreneurial culture clashed with disciplined processes, and their influential technical gurus were at times unwilling to support new processes.

Despite these drawbacks, we were able to design and pilot an initial production acceptance process. The process was much more streamlined than normal due to the accelerated nature of web-enabled applications. This streamlining actually helped to integrate it with a pilot change management process also being developed. The frequency of new applications builds in this Internet environment at times made change management and production acceptance almost indistinguishable. This integration also facilitated much cross-training between infrastructure groups and applications development to ensure each area understood the other as changes and deployments were being planned.

As we did with our prior companies, we performed an initial assessment of the production acceptance environment for Company E (see Figure 9-6). As you might expect with a start-up, the assessment was relatively low (although they did score well for cross-training). Their points totaled 16, for a final assessment score of 40 percent.

Company F

This company did everything right—almost. It broke off from a relatively rigid, conservative parent company and vowed to be more flexible, progressive, and streamlined. The IT executives understood the importance of robust infrastructure processes and committed the resources to make them a reality. Their only flaw was in diving headfirst into production acceptance before any semblance of a change management process was put in place.

Company F employs 4,000 workers, of whom 300 resided in IT. Their IT platform environment consists of two mainframe processors, two midrange computers, 30 servers, and approximately 1,800 desktops. There was a production services department at Company F that reported to an applications-support group, and there was a quality-assurance group that reported to applications development. They ran 700 production applications daily, a dozen or so more on weekends and during month-end closings, and deployed on average three new production applications per month. There was only a start of change management process and no production acceptance process.

Production Acceptance Process - Assessment Worksheet					
Process Owner: Employee E		Owner's Manager: Manager E		Date: N/A	
Category	Questions About Production Acceptance	None 1	Small 2	Medium 3	Large 4
Executive Support	To what degree does the executive sponsor show support for the production acceptance process with actions such as engaging development managers and their staffs in this process?		2		
Process Owner	To what degree does the process owner exhibit desirable traits and understand application development and deployment?	1			
Customer Involvement	To what degree are key customers, especially from development, operations, and the help desk, involved in the design and use of the process?		2		
Supplier Involvement	To what degree are key suppliers, such as 3 rd party vendors, trainers, and technical writers, involved in the design of the process?		2		
Service Metrics	To what degree are service metrics analyzed for trends such as the amount of positive feedback from users and the number of calls to the help desk, immediately after deployment?	1			
Process Metrics	To what degree are process metrics analyzed for trends such as the frequency and duration of delays to deployment and the accuracy and timeliness of documentation and training?	1			
Process Integration	To what degree does the production acceptance process integrate with other processes and tools such as change management and problem management?	1			
Streamlining/ Automation	To what degree is the production acceptance process streamlined by automating actions such as the documentation of a new application and online training for it by means of the intranet?		2		
Training of Staff	To what degree is the staff cross-trained on the production acceptance process, and how well is the effectiveness of the training verified?			3	
Process Documentation	To what degree is the quality and value of production acceptance documentation measured and maintained?	1			
Totals		5	8	3	0
Grand Total = 16					
Assessment Score = 16/40 = 40%					

Figure 9-6 Assessment Worksheet for Company E

When the company first asked us to upgrade their IT environment by implementing robust infrastructure processes, they suggested we begin with production acceptance. They reasoned that this would be a natural place to start because they were planning to deploy several new critical applications during the upcoming year and already had an application-support group in place. We conducted an initial assessment of their infrastructure and concluded that a change management process was more urgently needed than production acceptance. We based this conclusion on the number and variety of changes being made to their production environment locally and remotely and that both were increasing at an accelerated rate.

The IT executives were very receptive to our recommendation about change management and were very supportive of our efforts to involve various departments within IT. They suggested that we include the remote sites as part of our strategy and committed time and resources to the process. Including the remote sites was a key addition since it allowed us to standardize and integrate the process across all locations. Even though a partial change management process was already in place, the IT managers realized its disjointed nature and its lack of metrics and were willing to design a new process from scratch. They had not realized much need in the past to collect or analyze metrics, but they were won over after seeing how effective they could be in managing changes and new deployments.

One downside during our involvement at Company F was the frequent reorganizations, especially concerning operations, applications support, and our new production services function. This delayed some of the process approvals and made some of the managers unwilling to select a pilot project for production acceptance because responsibilities for certain applications were likely to change.

As to Company F's strengths then, they recognized that change management needed to be implemented prior to any other infrastructure processes, their IT executives provided strong support for these processes, they included their remote sites as part of the strategy, and they were willing to start with a clean slate. As to its weaknesses, Company F saw little need for the use of metrics, they had no recognition of the need to analyze metrics, they reorganized frequently, which undermined attempts at process improvements, and they were unwilling to nominate a pilot production acceptance project.

Despite these hurdles, a very effective change management process was implanted at Company F. There was total standardization among three sites despite the fact each site was separated from the other by more than 1,000 miles. There were service and process metrics in place

that were regularly collected, analyzed, and distributed. And it laid the foundation for a production acceptance process that would shortly follow. The most significant lesson learned was how important it was to implement key processes in the proper sequence. We would not have been as successful with either change management or production acceptance if we had not implemented them in the order we did.

As we did with our prior companies, we performed an initial assessment of the production acceptance environment for Company F (see Figure 9-7). Their prior establishment of an application-support group resulted in them having good services metrics, which were collected and analyzed on a regular basis. Their points totaled 27, for a final assessment score of 68 percent.

Company G

Company G is a relatively young financial services establishment that began eight years ago. It is successfully transitioning from that of a small start-up to a medium-sized enterprise. We have seen many a company at a similar time in their development struggle to transform from a novice firm into a mature organization. Company G does not seem to be struggling in this transformation. They have effectively promoted a culture of empowerment, honesty, and change; it is very much in evidence in their everyday manner of doing business.

Company G employs 2,500 workers, of whom 150 reside in IT. Their IT platform environment consists of 200 servers and approximately 1,500 desktops. The reason they have such a large number of servers in relation to desktops is that for several years, each new application was given its own server. This was one of several reasons for instituting a production acceptance process. There was no production services function at Company G, although there was a quality-assurance group that reported to applications development. They run 250 production applications daily and deploy an average of five new production applications per month. There was only the start of a change management process and no production acceptance process at the time we initiated our involvement.

Because the company was so young, it had few infrastructures processes in place. The upside to this was that there were few poor processes that needed to be re-worked. IT executives recognized the need to implement robust infrastructure processes and were willing to hire full-time staff to help implement and maintain them, particularly change management, production acceptance, and business continuity. They also saw the huge benefits from integrating these processes and stressed the need to design and implement these processes in a coordinated fashion.

Production Acceptance Process - Assessment Worksheet					
Process Owner: Employee F		Owner's Manager: Manager F		Date: N/A	
Category	Questions About Production Acceptance	None 1	Small 2	Medium 3	Large 4
Executive Support	To what degree does the executive sponsor show support for the production acceptance process with actions such as engaging development managers and their staffs in this process?			3	
Process Owner	To what degree does the process owner exhibit desirable traits and understand application development and deployment?			3	
Customer Involvement	To what degree are key customers, especially from development, operations, and the help desk, involved in the design and use of the process?			3	
Supplier Involvement	To what degree are key suppliers, such as 3 rd party vendors, trainers, and technical writers, involved in the design of the process?			3	
Service Metrics	To what degree are service metrics analyzed for trends such as the amount of positive feedback from users and the number of calls to the help desk, immediately after deployment?				4
Process Metrics	To what degree are process metrics analyzed for trends such as the frequency and duration of delays to deployment and the accuracy and timeliness of documentation and training?			3	
Process Integration	To what degree does the production acceptance process integrate with other processes and tools such as change management and problem management?		2		
Streamlining/ Automation	To what degree is the production acceptance process streamlined by automating actions such as the documentation of a new application and online training for it by means of the intranet?		2		
Training of Staff	To what degree is the staff cross-trained on the production acceptance process, and how well is the effectiveness of the training verified?			3	
Process Documentation	To what degree is the quality and value of production acceptance documentation measured and maintained?	1			
Totals		1	4	18	4
Grand Total = 27					
Assessment Score = 27/40 = 68%					

Figure 9-7 Assessment Worksheet for Company F

The company did have a few hurdles to overcome. Audits are a fact of life in the banking and financial services industry and Company G had their share of them. This sometimes caused them to focus more on the results of audits than on the quality of their processes and services. Another hurdle was the lack of experience of critical team leads. This was no fault of the leads. The company believed strongly in promoting from within, and with such a young organization, this meant the leads needed some time to grow into their jobs. The company did invest well in training and mentoring to address this.

The rapid growth of the company also caused many shifts in priorities. This caused some pilot applications for production acceptance to change, causing the pilot to be re-started more than once. The production acceptance process did integrate well into their system development life cycle (SDLC) methodology, although an exorbitant amount of detail went into the analyses of these processes.

In review of Company G's strengths, they provided a highly empowering environment, they were a relatively young firm with few poor processes, they integrated their processes well, and they were willing to hire full-time staff to implement a production acceptance process. As to their weaknesses, they sometimes placed more emphasis on audits than on results, they lacked experienced team leads, their rapid growth caused frequent priority changes, and their production acceptance analysis was overly detailed.

This company used three excellent strategies in its process-improvement efforts

1. They used a simple design in their processes.
2. They used widely accepted tools.
3. They had wide-spread involvement and agreement by multiple groups to ensure the required buy-in from all required areas.

These strategies worked very well in fashioning processes that were efficient, effective, and widely used.

As we did with our prior companies, we performed an initial assessment of the production acceptance environment for Company G (see Figure 9-8). Their points totaled 24, for a final assessment score of 60 percent.

Selected Companies Comparison in Summary

This concludes our discussion of our process experiences at seven client companies. Table 9-5 presents a summary comparison of each company's overall assessment scores, their relative strengths and weaknesses, and the lessons they and we learned from our process-improvement efforts.

Production Acceptance Process - Assessment Worksheet					
Process Owner: Employee G		Owner's Manager: Manager G		Date: N/A	
Category	Questions About Production Acceptance	None 1	Small 2	Medium 3	Large 4
Executive Support	To what degree does the executive sponsor show support for the production acceptance process with actions such as engaging development managers and their staffs in this process?		2		
Process Owner	To what degree does the process owner exhibit desirable traits and understand application development and deployment?		2		
Customer Involvement	To what degree are key customers, especially from development, operations, and the help desk, involved in the design and use of the process?		2		
Supplier Involvement	To what degree are key suppliers, such as 3 rd party vendors, trainers, and technical writers, involved in the design of the process?			3	
Service Metrics	To what degree are service metrics analyzed for trends such as the amount of positive feedback from users and the number of calls to the help desk, immediately after deployment?		2		
Process Metrics	To what degree are process metrics analyzed for trends such as the frequency and duration of delays to deployment and the accuracy and timeliness of documentation and training?	1			
Process Integration	To what degree does the production acceptance process integrate with other processes and tools such as change management and problem management?				4
Streamlining/ Automation	To what degree is the production acceptance process streamlined by automating actions such as the documentation of a new application and online training for it by means of the intranet?		2		
Training of Staff	To what degree is the staff cross-trained on the production acceptance process, and how well is the effectiveness of the training verified?			3	
Process Documentation	To what degree is the quality and value of production acceptance documentation measured and maintained?			3	
Totals		1	10	9	4
Grand Total = 24					
Assessment Score = 24/40 = 60%					

Figure 9-8 Assessment Worksheet for Company G

Table 9-5 Summary of Strengths, Weaknesses, and Lessons Learned for All Companies

	Company A	Company B	Company C	Company D	Company E	Company F	Company G
AS	50%	45%	48%	83%	40%	68%	60%
Strengths	<ul style="list-style-type: none"> - willing to try new techniques and new technologies - Committed to continuous process improvement - technically competent staff - willing to collect meaningful metrics 	<ul style="list-style-type: none"> - saw need for professional support for designing PA processes - started out with pilot programs - staffed pilot programs with qualified staff 	<ul style="list-style-type: none"> - recognized need to upgrade antiquated processes - committed resources to re-engineer SDLC - provided much training to users on new processes 	<ul style="list-style-type: none"> - committed to Baldrige quality award criteria - analyzed metrics well - strived to integrate, standardize, streamline, and then automate 	<ul style="list-style-type: none"> - high-energy start-up with no prior processes to re-engineer - small profile of applications allowed for many pilots - young staff eager to learn 	<ul style="list-style-type: none"> - recognized that change management must come first - total support of IT executives - remote sites part of strategy - willing to start with clean slate 	<ul style="list-style-type: none"> - highly empowering environment - relatively young firm with few poor processes - willing to hire full-time staff to implement PA
Weaknesses	<ul style="list-style-type: none"> - tended to not interact with staff - little documented training - operations and development group physically apart by 25 miles - collected metrics, but did not always analyze them 	<ul style="list-style-type: none"> - did not provide training and documentation to help desk group - support for PA process weakened after pilot program - no plans to integrate with other processes 	<ul style="list-style-type: none"> - did not involve the infrastructure - moved the control of PA into development out of operations - little or no training and documentation for help desk and operations 	<ul style="list-style-type: none"> - rush to meet deadlines undermined the following of the PA process - high priority projects allowed to bypass process - process not streamlined due to cutbacks - turf wars 	<ul style="list-style-type: none"> - rapid growth hindered use of processes - entrepreneurial culture clashed with disciplined processes - influential gurus unwilling to support new processes 	<ul style="list-style-type: none"> - saw little need to use metric - no recognition of need to analyze metrics - frequent re-orgs undermined improvements - unwilling to nominate a pilot PA project 	<ul style="list-style-type: none"> - more emphasis on audits than on results - lack of experienced team leads - rapid growth caused frequent priority changes - PA analysis overly detailed

	Company A	Company B	Company C	Company D	Company E	Company F	Company G
AS	50%	45%	48%	83%	40%	68%	60%
Lessons Learned	<ul style="list-style-type: none"> - development and operations need to work together from the start - infrastructure support groups need to support the PA process and operations 	<ul style="list-style-type: none"> - ensure the long-range commitments of IT - consider a change management process prior to a PA process 	<ul style="list-style-type: none"> - IT executives must ensure that operations control the PA process and that development is involved in the process design from the start 	<ul style="list-style-type: none"> - there are significant benefits from standardizing across all divisions and remote sites; this helps merger integration 	<ul style="list-style-type: none"> - one must be aware of changing and conflicting cultures due to the unstructured and entrepreneurial nature of startups 	<ul style="list-style-type: none"> - important to implement key processes in proper sequence, such as a change management process prior to production services 	<ul style="list-style-type: none"> - use simple, widely agreed upon processes, strategies, and tools to ensure the buy-in of all required support groups

AS = Assessment score for company’s production acceptance process

Summary

Production acceptance is the first systems management process we have looked at that significantly involves other departments and for which we offer a structured methodology to develop its procedures. I began with a formal definition of production acceptance followed by a summary of the 14 steps necessary to implement this process successfully.

We then discussed each of the 14 steps in detail and included recommended attributes for a production acceptance process owner, examples of prioritized requirements and policy statements, and a sample of a production acceptance process form. Next I explained the differences between production acceptance of new applications and that of new versions of existing applications and the change management process. The chapter concluded with a case study comparing the production acceptance processes of seven different companies.

Test Your Understanding

1. The production acceptance methodology is consistent and identical across all platforms. (True or False)
2. Service providers typically need just a small number of key representative customers to serve as a barometer of good customer service. (True or False)
3. Which of the following is not a high priority characteristic of a production acceptance process owner?
 - a. knowledge of applications
 - b. knowledge of operating systems
 - c. ability to evaluate documentation
 - d. ability to communicate effectively with software developers
4. Production acceptance requires much cooperation and support between the _____ and infrastructure departments.
5. Why are policy statements necessary for a robust production acceptance process?

Suggested Further Readings

1. *Managing the IT Service Process*; Computer Weekly Professional Services; Bruton, Noel; 2004
2. *Effective Computer User Support: How to Manage the IT Help Desk*; Bruton, Noel, 2002; Butterworth-Heinemann
3. *Customer Liaison*, IT Infrastructure Library Services, Greenhalgh, Nevelle, Smaridge, Melanie, CCTA, 2001

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