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IT Operational Process Practice: Change Management

Service Management Strategies

Dan Vogel

FOCAL POINT

Change management is considered one of the IT organization's most critical processes to enable rapidly evolving business requirements and sustain operations/infrastructure stability. Through 2006, varied change-automation tools and workflow will facilitate the change process. However, effective balancing of cost/business impacts, proper change categorization/associated risk assessments, and integration with other processes will denote ultimate change-management success.

CONTEXT

IT change management is the development and control of any change request that will alter the IT configuration or application. As a result, change requests must be effectively managed across multiple groups (e.g., operations, infrastructure, application development) and process-intersection points (e.g., configuration management, problem management, service-level management).

Although change management is consistently reported by IT operations (IT ops) groups as one of the top three critical operational processes, it is also the process that more than 75% of IT ops groups believe they need the most help in improving. In fact, fewer than 20% of IT ops groups have a change-management process that performs consistently and results in minimal negative impact to other operational processes. Through 2006, more than 50% of IT ops groups will define or refine their change-management process as part of overall operational process improvement efforts. Through 2003, most change-management initiatives will focus on developing change-management integration/workflows and the establishment of change authorization. By 2005, best-practice change-management success factors (e.g., change categorization, risk assessments, change performance measurement, change authorization) will appear in about 30% of IT ops groups.

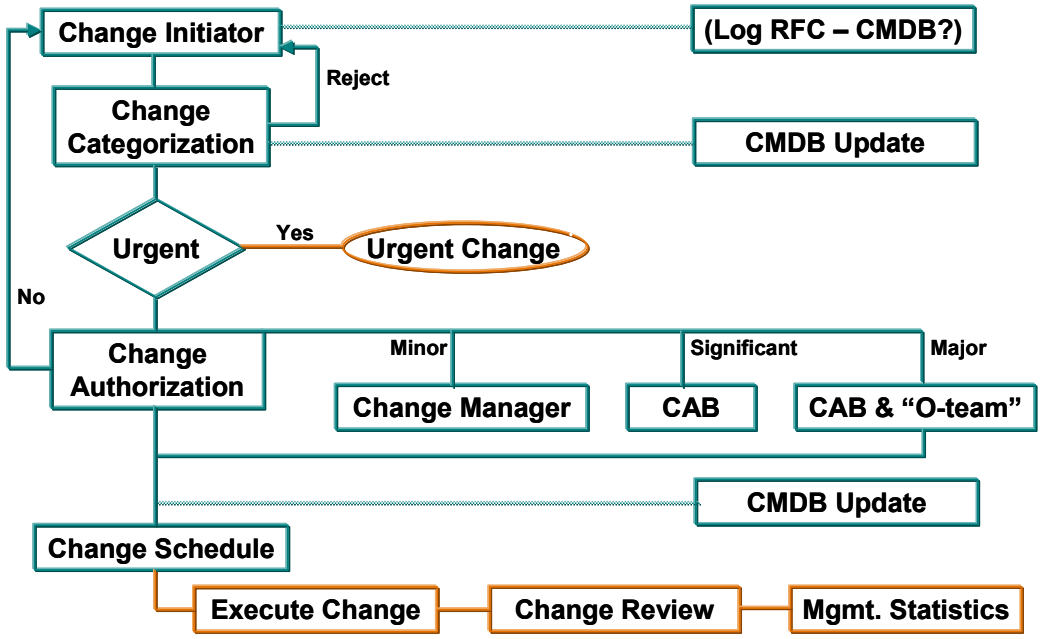
Change-Management Activities

Unfortunately, many IT ops groups seek complex change workflows (gathered from various sources) as a fix for their existing change-management process. Although workflows articulate general handoffs of information and process steps and are very useful as guidelines, many fail to recognize that there is no "best" change management flow. Certainly, IT ops groups must be aware of key change-management components, but the successful implementation of any process requires organizational context (e.g., the level of acceptance required for changes; whether the speed of change execution is more important to business performance than to a formalized change process). IT ops groups involved in refining change management should view it as a process incorporating numerous key change elements (see Figures 1 and 2):

- Receiving requests for change
- Stratifying the changes
- Planning the changes
- Conducting impact analysis (including back-out periods)
- Obtaining change approval
- Producing the change schedule
- Executing the change
- Performing a change postmortem

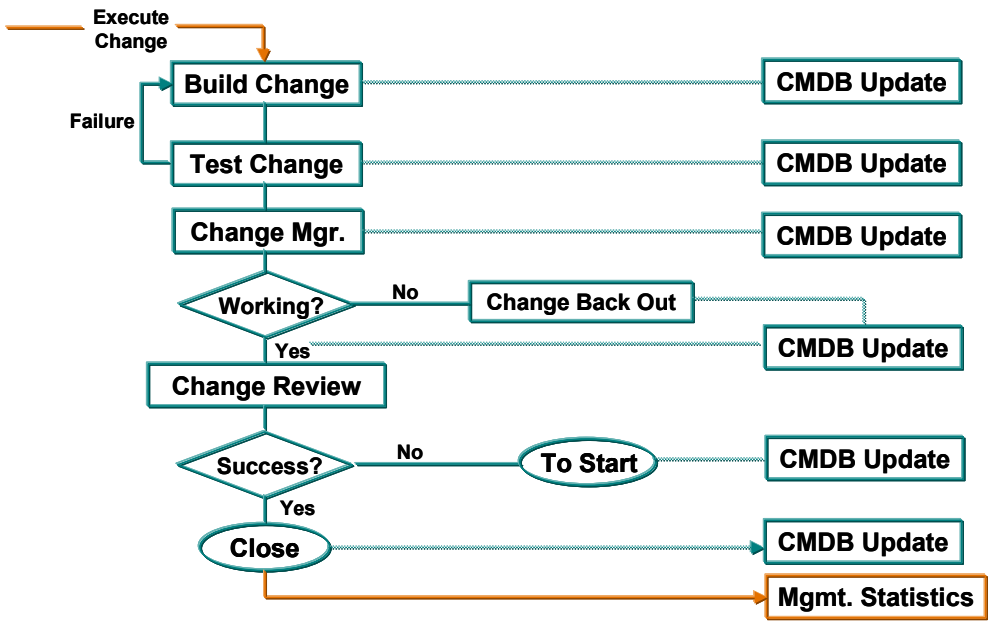
META Trend: During 2002/03, IT groups will assess operational process maturity and formalize process models. Through 2004/05, IT efficiency growth will focus on process integration, measurement, and aggregation of synergistic process groupings (i.e., centers of excellence). Through 2006, change, configuration, and asset management process automation will remain high-cost options.).

Figure 1 — Basic Change Procedure, Part 1



Source: META Group

Figure 2 — Basic Change Procedure, Part 2



Source: META Group

The Myth of a Rapid Change-Management Process

IT ops groups often ask how they should develop a rapid or urgent change process. Unfortunately, the only way to perform the change process more quickly is to limit the time spent on particular change activities. To speed the change process, IT ops groups often limit the time typically spent on risk assessments, the building of back-outs, and formal authorization (e.g., changes can be approved by any VP). IT ops groups that develop "urgent" change processes will experience abuse of that process.

Through 2008, IT ops groups that incorporate urgent change procedures into their formal change-management process will be most successful by using the following two techniques:

- Restricting ultimate sign-off responsibility for urgent changes to the change manager. Because change managers typically hold the change schedules, they will be most capable of assessing the potential change impacts resulting from timing issues.
- Improving their day-to-day configuration management process (i.e., mapping how IT items affect one another). Most organizations do not perform configuration management beyond server and desktop configuration. As a result, IT ops groups typically assemble a collection of individuals (e.g., a change advisory board) who have cumulative configuration knowledge. Having at least a moderate understanding of the IT environment's configuration enables small and medium enterprises (SMEs) to assess risk and provide more information to assist the change manager in making the urgent change decision.

Authorization of IT Change

There are three primary authorization levels within the change-management process:

- ***Change manager:*** The change manager authorizes and schedules day-to-day IT changes. With proper change categorization and risk assessments, IT ops groups should expect 80% of their IT changes to be authorized by the change manager.
- ***Change advisory board (CAB):*** The CAB is a collection of key individuals within the IT organization (e.g., service desk, network, application development, infrastructure, telecomm, IT operations director) who collectively assess change impact/risk for the 15% of changes that require an enterprise IT perspective.
- ***CAB and the executive team:*** For IT changes that may significantly affect business service levels, it may be appropriate for the CAB to work with executive groups to identify whether the potential business benefits outweigh the potential IT change risks.

Critical Process Integration Points

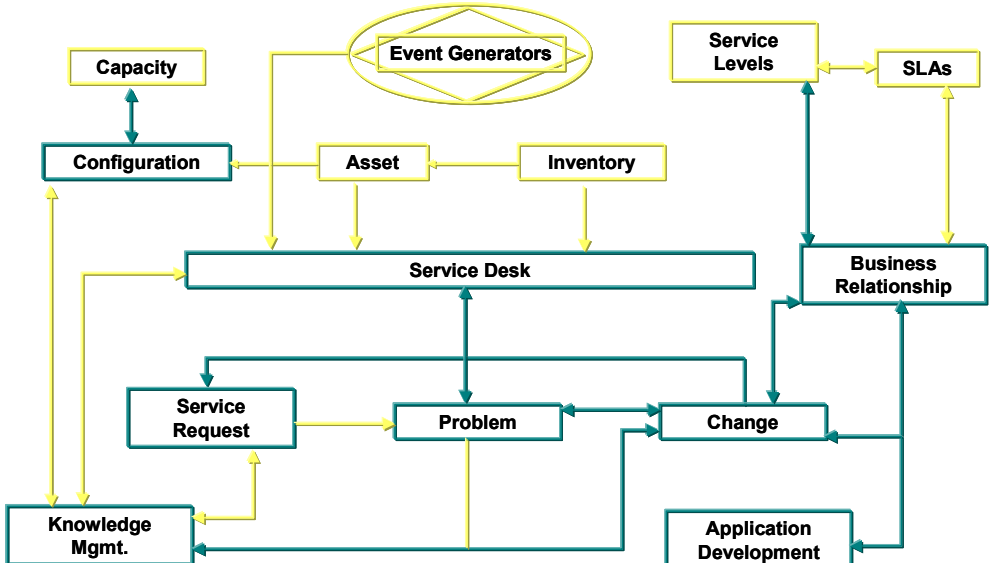
Through 2005, a well-detailed change management process will need to be developed and leveraged across organizations, with clearly defined and understood cross-process relationships (see Figure 3), as well as the change's impact on the internal and external business environment.

The help desk is a key interface between the IT organization and users and typically the first to be notified when an implemented change negatively affects users (e.g., an application produces incorrect/duplicate data as a result of changes to the applications reporting). Our research indicates that change-management best practices include notification of the help desk (if not the integration of the help desk into the change process) before changes are made to the IT environment. Help desk awareness of problems resulting from change will result not only in better handling of problem tickets, but also in the collection of change metrics. Consequently, change metrics culled from the help desk will prove invaluable to successful change management. Only 10% of IT ops groups currently have their help desks integrated with their change-management process, increasing to roughly 45% by 2005.

Configuration management is a process that identifies how various IT items (e.g., hardware, software, service-level agreements, components, documentation, databases, policies/procedures) are linked together within the IT environment. As a result, configuration management is a key process for effective change categorization, the assessment of change risk, change authorization, and change tracking, because it acts as a catalog of potential impact and a primary source of change knowledge. Fewer than 1% of organizations perform configuration management beyond simple desktop, server, and network configuration, significantly limiting the potential of the IT ops groups to effectively execute change management.

Demand management/request management is another process integration point that often limits the ability of the IT ops groups to effectively manage IT change. Because IT changes occur throughout the IT environment (e.g., application development, infrastructure/operations), it is imperative that the IT ops groups communicate expectations (e.g., change time frames, potential service-level impacts), properly assess the request (e.g., feasibility, authorization by a supervisor), and work with the requester to identify potential change options. Through 2005, IT ops groups will see increased use of the business relationship management role to facilitate the communication of operational/infrastructure change activity.

Figure 3 — Relating Processes to Change



Source: META Group

Change- and problem-management integration is one of the most critical process relationships within the IT organization. Because many requests for change are triggered by problem management, it is imperative that change management and problem management share much of the same knowledge. In addition, problems as a result of change must be communicated back to change management to reduce potential business impacts early (perhaps even before the business users are aware of the problem).

Major Change-Management Roles and Responsibilities

Although there are many roles and responsibilities involved in the change-management process overall (e.g., CAB participation, SME risk assessments, logging of change requests), there tends to be three primary roles and responsibilities that are essential to the overall success of the change from management process. Many IT ops groups will layer these change responsibilities until they align the change roles with better-defined process.

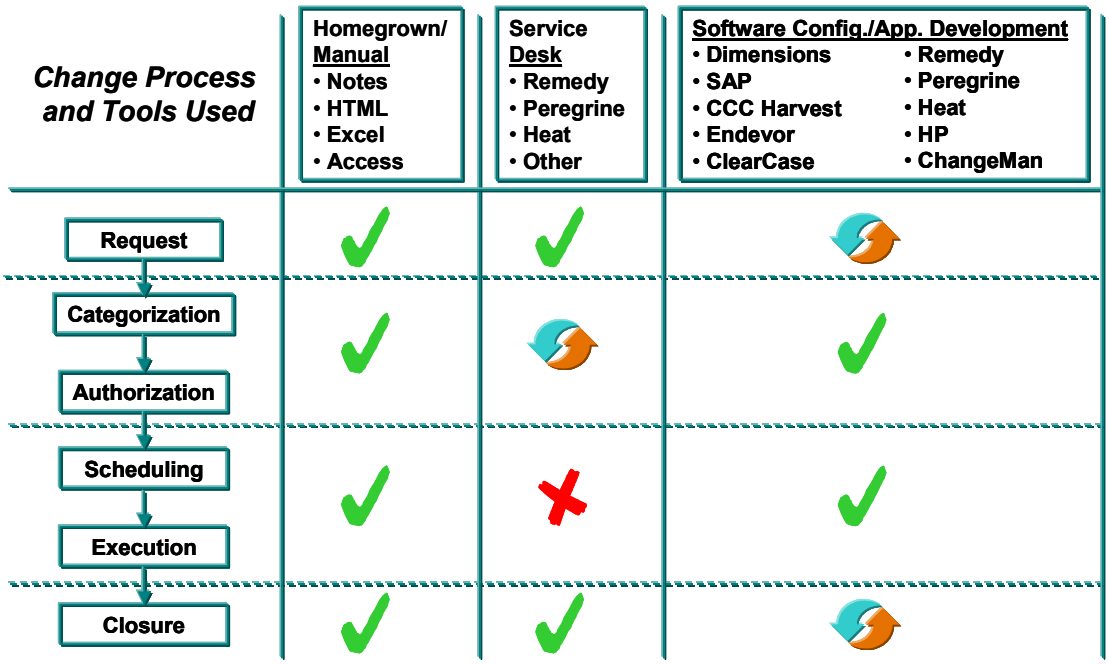
- ***Process owner:*** He or she has primary responsibility for designing the process and auditing compliance/process efficacy. Primary responsibilities include:
  - Designing the process
  - Reviewing process compliance
  - Auditing process efficiency
  - Reviewing the process for improvement potential

- ***Change coordinator:*** The change coordinator is responsible for maintaining the change logs and coordinating general change-management information. Primary responsibilities include:
  - Coordinating communication
  - Maintaining documentation
  - Identifying daily consistency issues
- ***Change manager:*** He or she plays the essential role with regard to change management. Primary responsibilities include:
  - Filtering requests
  - Setting initial prioritization
  - Authorizing/scheduling changes
  - Change reviewing

Automating the Change-Management Process

Fewer than 40% of IT ops groups have an automated change-management process. Nearly 50% of IT ops groups that have automated their change-management process have built the change tool themselves (e.g., Lotus Notes, HTML, Access), with the remainder using numerous point-oriented applications (e.g., software configuration management, service desk). Although many tools may be customized to enable end-to-end change management (i.e., change requests, change builds, change closure), and many tools claim to offer full-scope change technology, we have not seen an enterprisewide tool covering the full spectrum of IT change. In fact, most IT ops groups using change automation will encounter scalloped change automation (see Figure 4).

Figure 4 — Examples of Change-Management Automation



Source: META Group

The majority of IT ops groups use their service-desk tool (e.g., Remedy, Peregrine, Heat) to capture change requests on the front end and for closure on the back end. Change scheduling, builds, and deployment are typically not done within the service desk tool but are handed off to one of the various configuration management tools (e.g., ChangeMan, InfoMan, Dimensions, CCC Harvest, Star Base). Although many of the tool vendors are attempting to expand into the enterprisewide change-management market, we do not expect significant gains to be made prior to 2005.

Some end-to-end change-management tools have emerged within specific environments (e.g., SAP has a change-management tool designed specifically to deal with SAP's BASIS environment); however, these tools are typically not leveraged across the organization.

Measuring Change-Management Success

Before beginning a change-management improvement effort, it is essential that the IT ops groups take a comprehensive baseline of existing change management performance. Although fewer than 10% of IT ops groups measure change performance prior to a refinement initiative, effective baselining will prove critical to ensuring that results of the effort can be effectively captured and communicated. More than 50% of IT ops groups that implemented change measurement at the beginning of an improvement effort were more capable of identifying and articulating the need for tactical change plan modifications.

Some organizations believe they should measure process performance only after the implementation of the new change-management process. Our research indicates that there are numerous basic trend measures that the IT ops groups can and should measure regardless of its stage in the process implementation.

There are three primary areas of change-management measurement: basic trend information; whether the process is being performed well; and whether the process itself is a good process.

Basic trend information:
- Number of changes implemented in the period
- Number of requests for change
- Number/percentage of changes scheduled and executed on time

Numerous performance measures identify whether a process is being performed properly, consistently, and repeatably. These measures tend to identify process handoff success (e.g., percentage of changes resulting in a call to the service desk), as well as general process performance and adherence (e.g., percentage of changes backed out). Successful process performance measurement typically does not occur until the organization has reached at least a moderate level of process standardization. Fewer than 25% of IT ops groups report these measures, though we expect that number to grow to nearly 45% by 2005.

Process performance measures:
- Number/percentage of successful/unsuccessful changes
- Number/percentage of changes backed out
- Number/percentage of changes resulting in a problem/incident
- Number/percentage of changes resulting in a call to the service desk
- Number/percentage of requests for change rejected

In addition to basic trend and process performance measures, the IT ops groups should prepare to capture measures relating to overall process quality. The point is that although the previous measures identify how well the process is performed, they do not indicate whether the process itself is good. By 2004, we will begin to see process quality measurement (e.g., percentage of changes outside normal change process) used to assess overall process quality in addition to performance.

Process quality measures:
- Number/percentage of changes outside normal change process
- Number/percentage of requests relating to one configuration item
- Change backlogs, broken down by configuration items

Change-Improvement Targets

The lack of change measurement and effective cost tracking within the IT ops groups will prevent most organizations from realizing definitive ROI in relation to their change-management improvement efforts. Through 2004, IT ops groups working to improve their change-management processes should set realistic improvement targets, not necessarily attempt to place a dollar value on the improvement effort.
- Reducing problems as a result of change
- Reducing service requests that are presented as changes

- Reducing the cost of changes by 10%
- Reducing full-time-equivalent participation in the change advisory board
- Reducing the number of changes that are rejected by 5%
- Reducing the number of changes that go through the urgent change process

Change Categorization Levels

We believe that through 2002, IT ops groups that are refining their change-management process must make substantial efforts to stratify their IT change lists. It should be noted that effective stratification of changes yields two benefits: more efficient resource allocation and better prioritization of higher-level changes (by providing guidelines for personnel).

- ***Level 1 — High-Impact Change:*** High-impact changes are those in which a major business impact or high visibility across the user base may be experienced as a result of a change made by operations/infrastructure (e.g., consolidating two application servers may result in complete failure of user availability). In addition, changes that are lengthy or for which back-out procedures are either lengthy or non-existent (e.g., updating Oracle DB versions on the application server) are also strong indicators of changes that will have a high impact on the organization. Through 2003, IT ops groups will take reactive postures regarding high-impact changes (i.e., firefighting). By 2006, IT ops groups will evolve to proactive, business-oriented positions using business relationship management and participation in executive-level change advisory boards to more accurately assess business impacts and reset line-of-business service-level expectations.
- ***Level 2 — Medium/High-Impact Change:*** Medium/high-level impacts are those that may again result in major potential business impact or high visibility across the user base. The primary difference between medium/high and high-level impact change is that medium/high-impact changes may require involved back-outs (e.g., backing out a materials table change within the SAP environment), but they can be backed out nonetheless. Through 2004, more than 35% of IT ops groups will mitigate medium/high-level impact changes by consistently building change back-out procedures into their change builds and via tighter integration among change, production control, quality assurance, and problem management processes.
- ***Level 3 — Medium-Impact Change:*** Typically, medium-impact changes can be characterized as those with potentially minimal impact to the organization, or those for which back-outs are relatively easy/effective.
- ***Level 4 — Low-Impact Change:*** Low-impact changes are routinely characterized as day-to-day changes or those that affect single customers/small groups. Low-impact/risk changes should be categorized and streamlined but still tracked as part of change performance. Although service requests could be considered low-impact changes, IT operations groups must keep them separate for more effective management/resource utilization.

Through 2004, IT ops groups will greatly improve resource allocation management and change prioritization capabilities by developing defined and preauthorized day-to-day change and service request lists, preassessing risk levels, preassigning ownership responsibilities for those change types, and bypassing formalized change approval.

Naturally, effective change categorization (especially the development of predefined change lists and associated authorizations) will require significant input from change subject-matter experts, and a methodological risk-measurement schema. Through 2005, more than 40% of IT ops groups will attempt to quantify change risk, using change risk assessment models as part of the formalized change-management process.

Bottom Line

Through 2005, more than 50% of IT operations groups will refine their change-management policies. Change-management success factors will include the stratification of changes, integration with the help desk, and adherence to proper change management by external providers.

Business Impact: The ability of the organization to perform enterprisewide change management directly affects the IT organization's ability to provide ongoing business support. Through 2005, lines of business should actively work with the IT organization to co-develop enterprise change-management guidelines and knowledge sharing, as well as take an active role on the change advisory board.