META Group

META Delta

28 February 2003 File: SMS 1147

Maturing Change Management Processes

Service Management Strategies

Wissam Raffoul

IT organizations (ITOs) wishing to reduce unscheduled service downtime caused by system and application changes should raise the change management process maturity to Level 3 (i.e., defined). This will enable ITOs to reduce the impact changes have on business operations, report the value of changes to business units, and ensure disaster recovery plans are updated in a timely manner following production environment changes.

During the past five years, some Global 2000 ITOs established change management (CM) processes to ensure that standard, urgent, and after-hours application and system changes are authorized, tested, and documented prior to the release to production. Although these initiatives created a disciplined IT operational environment, they failed to understand the impact change has on business operations, establish a quality assurance (QA) test environment to minimize service interruptions, and reduce change frequency targeted to fix the same problem. In accordance with META Group's Process Maturity Model (see SMS META Practice 1), the maturity level of these CM processes is about 2 (i.e., repeatable; see Figure 1). We believe this maturity level is insufficient to identify potential performance problems caused by changes, improve overall service availability, and assess outsourcing vendors' change compliance by the enterprise architecture. Therefore, ITOs should establish a program to assess current CM process maturity (see Figure 2), and create a plan to raise the maturity to at least Level 3 in a 12-month period. This can be achieved by undertaking the following:

- Integrating the CM process with configuration management, service-level management, problem management, and disaster recovery processes
- Working closely with business units to understand business cycles and giving early warnings of planned change implementations
- Expediting the change approval process by delegating authority and developing approval checklists
- Continually assessing the need for a QA testing environment by monitoring unscheduled service outages caused by changes
- Tightly linking CM with production acceptance process to ensure IT operations personnel are involved at an early stage of the application development (or package deployment) life cycle
- Improving CM process automation
- Ensuring disaster recovery plans (DRPs) are timely updated following change implementation
- Improving process documentation to reduce human errors

By 2004, 30% of G2000 ITOs will synchronize DRP updates with change implementation in the production environment. This will be accomplished by assessing change's impact on DRP viability, and enforcing regular DRP update sessions. As a result, service availability will be aligned with business needs in the event of a disaster (see SMS Delta 837).

By 2005, 40% of G2000 ITOs will raise the maturity of existing CM processes to Level 3 by embedding best practices, elevating process automation level, and upgrading people skills. This should be achieved via close cooperation between ITO staff members and business-unit stakeholders. By 2006, 50% of G2000 ITOs will ensure that IT operations personnel play an active role throughout the application development life cycle, making certain that IT operations' requirements (e.g., backup/recovery, monitoring) are addressed well in advance and the effectiveness of CM processes is maximized.

META Trend: Through 2008, IT operations groups seeking to effectively develop and enhance their operational processes must formalize their efforts, focusing on process definitions, performance measurement, and analysis of potential refinements — ultimately creating a culture that embraces continuous improvement. Although most IT operations groups' efforts are still in their infancy, significant gains will be made by leveraging the process refinement practices experienced by both IT (e.g., ITIL) and non-IT oriented (e.g., Six Sigma) organizations.

208 Harbor Drive • Stamford, CT 06912-0061 • (203) 973-6700 • Fax (203) 359-8066 • metagroup.com

Process Integration. Although the full automation of configuration management remains a high-cost option until 2006, we believe the following configuration management aspects should at least be automated to improve CM process effectiveness:

- Recording all changes applied to an asset
- Defining interasset dependencies
- Identifying assets' stakeholders to be consulted while developing or implementing change plans

META Group research indicates most existing change implementation plans ill-examine change's effect on current service-level agreements. To combat this issue, ITOs should tightly link service-level and CM processes, resulting in development of a checklist to assess change's impact on service availability, reliability targets, availability of support resources, and special processing requirements (e.g., end-of-month processing).

Although traditional CM processes are appropriate for large changes (e.g., large ERP deployment), they are inefficient in handling urgent problem fixes and business units' emergency changes (e.g., implementing a new financial report to respond to a critical market event). ITOs should develop a simplified version of the CM process to apply problem fixes and implement emergency changes outside the normal change window.

Change Release Plan. Most ITOs are reactive in implementing changes (i.e., implementing one change at a time without seeing the overall picture), which will complicate resource management and delay change implementation. ITOs should develop a change release plan in conjunction with business units. This will anticipate the major infrastructure and application implementations, ensure minimum disruption to business cycles, and create a foundation for resource scheduling.

Automatic Notification for Approval. Our research indicates most of the criticism targeted at existing CM processes is related to the excessive time taken by managers to approve changes. This is primarily due to managers' lack of availability. To ensure approvals are given in a timely manner, ITOs should delegate authority and issue early automatic reminders to managers or delegates.

QA Testing Business Case. Our research indicates 20% of unscheduled service downtime is due to changes caused by inadequate testing. Although the price tag for implementing a full QA testing environment remains a high-cost option, ITOs should introduce QA testing environments for some mission-critical systems. To build a business case for this matter, ITOs should capture at least the following statistics:

- Unscheduled outages caused by changes
- Number of changes to fix the same problem
- Number of changes implemented without testing

Process Automation Improvement. Most existing CM automation initiatives revolve around issuing a change request form and tracking its status. In the majority of cases, the reporting capability is limited. This will restrict trend analysis and impede progressing to the next process maturity level.

Process Documentation Improvement. Our research indicates most existing CM processes documentation is poor, thereby providing limited guidance to junior staff members involved in CM activities. ITOs should ensure the following minimum requirements are met:

- Minimum of four activity/subactivity levels to ensure sufficient "how-to" is built into the CM process
- Clear input/output for each activity to ensure effective handover among IT groups
- Set of tools to improve CM process usability, including risk assessment checklists, testing guidelines, and best practices

Bottom Line

IT organizations should assess the maturity of current change management processes, estimate the costs and benefits of reaching the next process maturity level, nominate a project manager to assume responsibility for overall implementation, and communicate process maturity plans to business units.

Business Impact: Business units will benefit from a change management process maturity program that reduces service outages, aligns change's implementation with business cycles, and improves overall service quality.

Figure 1 — Process Maturity Level

Maturity Type	Maturity Level
Ad hoc	1
Repeatable	2
Defined	3
Managed	4
Optimized	5

Source: META Group

Figure 2 — Assessing the Process Maturity Level

1. Process Definition (40%)
1.1 Tasks (20 points)
1. How well is the existing change management (CM) process documented in terms of stages, phases, activities, tasks, inputs, outputs, and tools? (5 points)
2. What is a change? What is the scope? (5 points)
   a. Is it system software?
   b. Is it application software?
   c. Is it configuration change?
   d. Is it problem fix?
3. Does the existing CM process have an end-to-end focus? (2 points)
4. Does the existing CM process control all changes to the production environment? Is there one change management process, or are fragmented processes used? (2 points)
5. Is the same CM process used across all technologies? (2 points)
6. Do application developers and vendors know the change management criteria? (2 points)
7. Are there change management escalation procedures to ensure changes are completed on time? (2 points)

1.2 Input/Output (I/O; 10 points)
1. Is I/O defined at least for each phase? (7 points)
2. Is I/O meaningful? (3 points)

1.3 Templates (15 points)
1. What templates are available?
   a. Change request (1 point)
   b. Risk assessment questions (5 points)
   c. Stakeholder list for communication purposes (1 point)
   d. Scoping template (1 point)
   e. Quality assurance (QA) test definitions (4 points)
   f. Operations approval checklist (1 point)
   g. Production tests (1 point)
   h. Resource allocation model (1 point)

1.4 Best Practices (40 points)
1. Does the existing change management process assess the impact on server and network performance, security, and service levels? Are there documented checklists? (5 points)
2. Are there QA tests to be undertaken before implementing changes in production? Does a QA test environment exist? (5 points)
3. Do business units authorize changes to the production environment? (2 points)
4. Does the operations group authorize final implementation of changes in production? (2 points)
5. Is there a simplified change management process to implement urgent changes in production? (2 points)

(cont.)

Figure 2 — Assessing the Process Maturity Level *(cont.)*

6. Is the existing change management process strict to follow? (3 points)
7. Is the status of all changes known? (1 point)
8. Is there management commitment for enforcing change management disciplines? (3 points)
9. Is there empowerment to reject changes? (2 points)
10. What are the back-out procedures? (1 point)
11. Is there a documented CM policy? Is the CM policy enforced? (2 points)
12. What is the process to schedule a change? (1 point)
13. How is customer satisfaction with the changes that are implemented verified? (2 points)
14. What is the process to update customer documentation due to new changes in the production environment? (2 points)
15. How do outsourcing vendors implement changes? (2 points)
16. Is there a rapid assimilation technique? For example, implementing SAP, e-mail, e-business, etc. (5 points)

1.5 Process Update (5 points)

1. What is the process to update the change management process? (3 points)
2. How is process improvement triggered? (1 point)
3. Who is responsible for the process update? (1 point)
    a. Who is the owner?
    b. Who are the stakeholders?

1.6 Overheads Steps (10 points)

1. Has the process been optimized?

2. Process Integration (10%)

1. How does the existing change management process link to service-level management? (20 points)
2. How does the existing change management process link to problem management? (20 points)
3. How does the existing change management process link to configuration management? (20 points)
4. Does the change management process provide an update to operations? (20 points)
5. Is change management linked to the disaster recovery plan update? (20 points)

3. Skills/Staff (20%)

1. Is there a change management organization, to allocate tasks and manage workload? (50 points)
    a. What is the makeup of the team?
    b. What are the roles and responsibilities?
    c. Is there a change management forum?
2. Do staff members use the process? (10 points)
3. Are staff members trained to use the process? (10 points)
4. How many staff members are allocated to the change management process? Is headcount in line with the benchmark? (30 points)

4. Tool Automation (10%)

1. Which software is used to support the change management process? (50 points)
2. Which process areas are not automated? (20 points)
3. Is it practical to use the existing software? (10 points)
4. What are the existing software limitations? (20 points)

5. Metrics (20%)

1. Are statistics captured that cover the following? (50 points):
    a. Number of changes causing downtime
    b. Number of changes to fix the same problem
    c. Number of changes implemented without authorization
    d. Number of changes implemented without testing
    e. Number of changes that caused other problems
    f. Number of changes not completed on time
    g. Number of changes rejected
2. Who are the metrics owners? (10 points)
3. Has the quality of reports been assessed? (20 points)
4. Has CM data been kept for at least one year? (20 points)

Source: META Group