

# **ITIL BEST PRACTICES: MAXIMIZING THE BUSINESS VALUE OF IT – PART II**

## ABSTRACT

Part II of this series on Information Technology Infrastructure Library (ITIL®) best practices looks at maximizing the business value of IT and the reasons that process excellence alone are not sufficient. Maximizing business value requires continuous process improvements, business-to-IT alignment, and optimized application quality across the lifecycle.

While many vendors can provide solutions to automate portions of the ITIL service management processes, Mercury Business Technology Optimization (BTO) provides an integrated solution that can align implementation of the ITIL service support and service delivery disciplines with the strategic ITIL processes of business perspective and application management.

Change management and service-level management form the bedrock of enabling an organization to maximize the business value of IT. As the global leader in BTO, Mercury helps organizations successfully implement these processes by managing to business-centric service levels and delivering repeatable and enforceable processes.

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### Challenges for IT Operations

To be successful in today's competitive global markets, organizations are realizing that they need enforceable and repeatable IT processes that can improve the efficiency, effectiveness, and quality of their IT services (control), drive compliance with regulatory requirements such as Sarbanes-Oxley (compliance), and reliably support key business needs (alignment). Achieving control, compliance, and alignment is an extremely difficult task due to the complex nature of the modern IT operations environment.

Today's IT operating environments typically contain a wide range of diverse application services and infrastructure components that have often evolved and expanded over time, resulting in a complex network of servers and software components that can be difficult and costly to manage, impedes agility, and limits IT efficiency and effectiveness.

The vast number of components also implies a large volume of change requests, which in turn create additional opportunities for errors that can lead to service downtime. Not only are interdependencies between IT services sometimes overlooked in change requests, but the business impact of changes is difficult to ascertain. The result is poor alignment between IT and the business, and difficulty controlling IT service quality and costs.

In spite of these challenges, IT managers are under increasing pressure to deliver on demanding service requests and to adapt to changing business needs. They are looking to the best practices defined in the ITIL disciplines as a means to gain control. Though ITIL is not new, it is increasingly popular with organizations that are striving to get a handle on their IT operations.

"ITIL has gained significant traction in the last 12 months."

"About a third of \$1 billion-plus companies are starting to implement ITIL."

Thomas Mendel, Forrester (2004)

### Maximizing Business Value of IT Services with ITIL

As the most widely accepted de facto global approach to IT services management, ITIL provides a non-proprietary IT process framework that is centered on sound IT service management practices and principals. ITIL does not represent an end-all solution, but a collection of industry best practices and a systematic approach for planning, developing, delivering, and supporting IT services. The ITIL approach is completely business-oriented and process-centric. It offers a widely accepted and time-proven model and methodology for effective IT operations that enforce business priorities.

A Hackett study in 2002 showed that well-aligned business service management can save an average of 17 percent per user while providing up to a 28-percent improvement in IT project completion rates. The benefits of tightly aligned IT infrastructure can include:

- Improved ability to meet compliance and audit requirements.
- Increased agility to respond to new business challenges.

- Minimized risk and reduced operational and support costs.
- The ability to anticipate and respond to changing internal and external conditions.
- An increased ability to predictably meet deployment targets.
- An increased ability to meet service-level agreements (SLAs).
- Reduced technical support staff requirements.
- Increased customer satisfaction.

While the ITIL processes are sound, putting them into practice and delivering on increased business value requires tools that can enforce repeatable processes and enhance efficiency. Many existing system management tools are narrow in their focus and are simply not adequate for coping with modern data-center complexity nor for delivering ITIL's service-centric and process-centric approach. In many businesses today, managing IT services and their supporting applications and IT infrastructure is still a highly inefficient process that involves significant manual effort.

Achieving ITIL's goals requires continuous process improvements, business to IT alignment, and optimized application quality across the lifecycle (Figure 1).

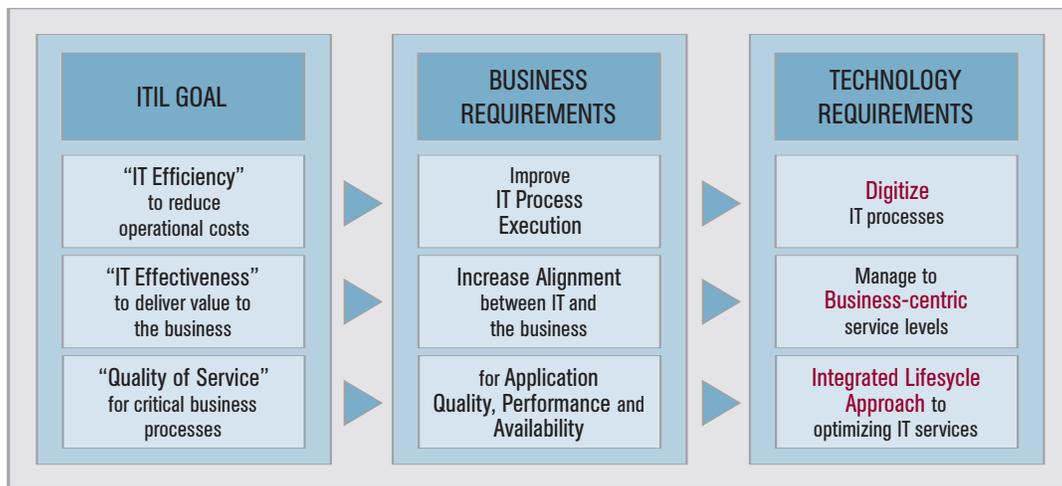


Figure 1: Achieving the goals of ITIL requires technology solutions that help build business value.

The first ITIL goal of *IT efficiency* requires more than just operational processes. ITIL demonstrates that just as IT services and resources have become virtualized, the development, deployment, and management of these IT services must become automated. This automation can be achieved only by digitizing key IT processes to make them enforceable and repeatable, reducing the opportunity for errors and driving greater efficiency of IT operations.

The second ITIL goal is *IT effectiveness*. It requires alignment between business goals and IT deliverables. To accomplish this, organizations need advanced, high-level tools that understand the interdependencies and complexities of IT services. More than endless screens of events generated by a collection of legacy event-monitoring tools, those implementing ITIL need state-of-the-art technology that provides real correlation to business priorities. IT services must be managed according to business and end-user impact, something that many of today's system management tools cannot provide.

And finally, the third ITIL goal of improving *quality of service* requires an integrated approach to lifecycle management from application development and deployment to production and change management. High-level management tools that span the entire application lifecycle enable IT managers to leverage artifacts such as testing scripts from application development to gain efficiency and accuracy in problem resolution and release management in the production environment. Using an integrated lifecycle approach, organizations can truly optimize their IT services.

Mercury delivers the only offering that spans the entire ITIL service management landscape and aligns strategic, tactical, and operational processes with business priorities. There are three primary features that make Mercury's offering unique:

- *Digitized* processes across the entire spectrum of ITIL service management disciplines.
- All ITIL *processes are naturally aligned with business priorities* by measuring and monitoring IT services based on business and end-user impact.
- A lifecycle approach to optimizing application quality, performance, and availability.

While ITIL provides definitions for a set of best-practice IT processes, Mercury BTO enables organizations to customize those processes for their own needs, at the same time digitizing, enforcing, and automating key processes so that they can be measured and improved.

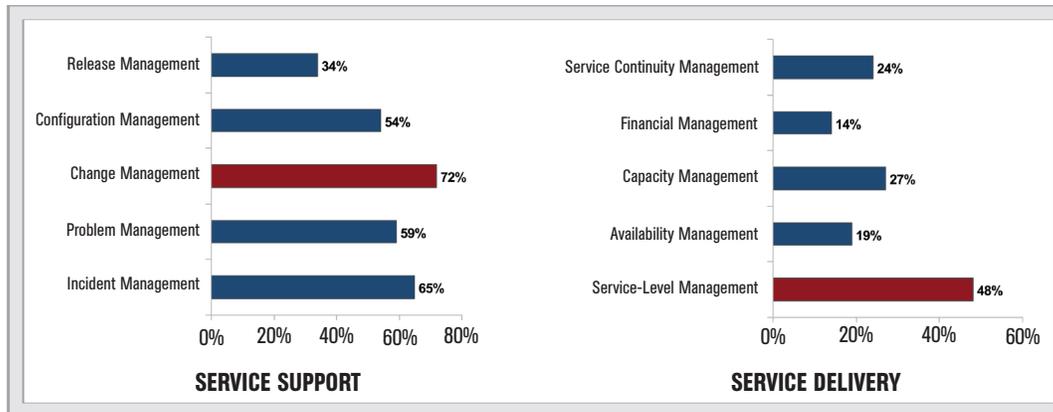


Figure 2: Change management and service-level management were the top priorities in a survey of companies implementing ITIL.

Source: Mercury Survey of Pink Elephant ITSM Conference attendees, Feb. 2005

### Gaining Value from an ITIL Implementation – Quickly

To gain an understanding of the business priorities for implementing various ITIL disciplines, Mercury surveyed approximately 200 attendees at a Pink Elephant ITSM Conference in February 2005. Eighty percent of the survey respondents were already engaged in implementing ITIL disciplines, indicating that their input is based on real experience regarding the business impact of ITIL disciplines.

Figure 2 shows the results when respondents were asked to identify the most valuable ITIL processes within the ITIL service support discipline and the ITIL service delivery discipline. Change management and service-level management were identified as the ITIL processes that could deliver the greatest business value.

The results are especially important in light of the fact that respondents also indicated that 79 percent are moving forward with ITIL (decided, implementing, or doing phase 2). Only 21 percent were evaluating ITIL or had no plans for ITIL. So this data is a good indicator of where people knowledgeable about ITIL see the most value.

The following sections describe more about the benefits of implementing these two key ITIL processes, and explain how Mercury BTO can help businesses generate greater business value when implementing these and other ITIL processes.

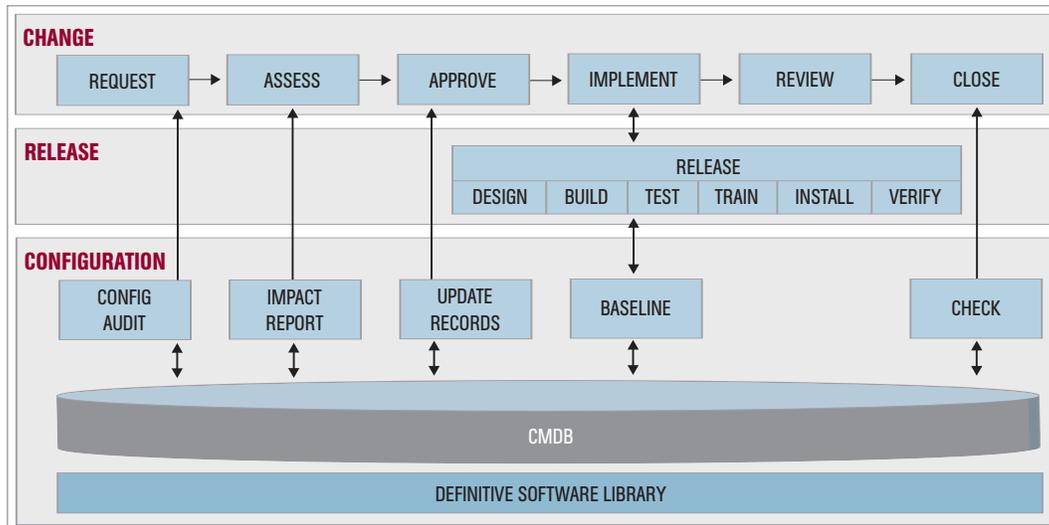


Figure 3: Effective change management requires integration with release and configuration management.

**Effective Change Management Requires Implementation of Configuration and Release Management**

As previously noted in the survey results, one of the biggest challenges that customers face in production environments is managing change. Complex interdependencies between application services and infrastructure services make it difficult to implement changes even when strict change management policies are in place. Many industry experts emphasize that while change management is one of the most complex and challenging problems that businesses face, it is also a critically important process. Poor change management can be linked directly to poor IT service quality.

According to ITIL, effective change management requires coordination with configuration management and release management as shown in Figure 3.

Implementing changes requires a repeatable and enforceable change notification, review, and approval process that incorporates the most up-to-date configuration information and enforces quality procedures for the release and provisioning of approved changes. Mercury provides a solution that integrates all three of these areas to enforce repeatable processes that can improve the success of implemented changes by:

- Enforcing quality through a digitized workflow.
- Providing change impact analysis and monitoring.
- Ensuring proper release and distribution of approved changes.

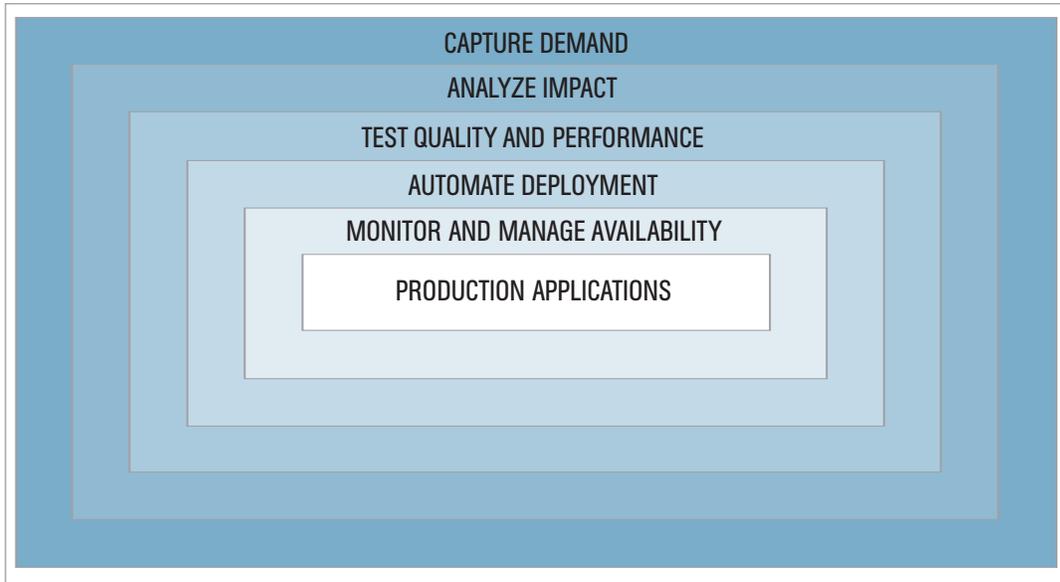


Figure 4: Mercury's five lines of defense to mitigate risk.

Mercury's offering for implementing effective change management is part of a comprehensive approach that provides five lines of defense to mitigate risk in critical applications and achieve sustainable compliance (Figure 4). These five lines of defense can function separately and be implemented separately, starting where an organization feels the greatest pain.

**Defense Line 1: Capture Demand**

It is critical in today's closely regulated environment that all requests for changes are captured in one place. Informal "side door" and "back door" requests for system changes pose serious risks beyond just inefficiency by increasing the likelihood of system problems, failure, and non-compliance. There must only be one way to request system changes, and it must be consistent and enforced. This "single front door" to IT is the approach Mercury takes with its demand management product in Mercury IT Governance Center™. Sarbanes-Oxley controls are built in to determine if a change or project request affects an "in-scope" application and requires oversight.

**Defense Line 2: Analyze Impact**

A second line of defense in an efficient change management process is to arm key stakeholders (such as members of a Change Advisory Board) with the critical information they need to analyze changes before approving them. Mercury offers the unique ability to analyze the impact of change at the application level, spanning from infrastructure to applications, through the application mapping offering in Mercury Business Availability Center™.

**Defense Line 3: Application Testing**

Key business processes undergoing change must work as expected and scale to business requirements. Before a change is deployed, one must be sure that it will work as expected. Mercury Quality Center™ and Mercury Performance Center™ are the leading products for automated application testing. It is important, though, that this third line of defense be integrated with upstream demand management and downstream implementation. This not only improves efficiency, but also helps ensure that the entire change process generates an automated audit trail from end-to-end.

**Defense Line 4: Automated Deployment**

The fourth line of defense uses Mercury IT Governance Center to automate the migration of application change from the lab to staging and into production. Automated deployment not only reduces cost, rework, and business risk, but also accelerates delivery of business value by enabling companies to effectively roll out changes in less time, even in large and complex enterprise environments.

**Defense Line 5: Monitor and Manage Availability and Configuration**

The final line of defense is proper management of key business processes and service levels in production while ensuring integrity of the underlying IT infrastructure configurations. Monitoring the performance, availability, and integrity of mission-critical applications is a requirement for healthy systems in any situation and is even more important when full audit documentation is required for Sarbanes-Oxley compliance. Mercury Business Availability Center supports these activities.

The following sections provide a look at Mercury's solution for each of the change, configuration, and release management processes.

**Mercury Solution for Change Management**

Beyond merely automating change management, Mercury BTO helps ensure that change happens as part of an enforced and repeatable process, with the right people involved at the right time and at the right place. Once established, Mercury BTO can be used to manage digitized workflows from the initial change request through approval processing, implementation testing, and release management.

Mercury's use of a broad workflow engine allows it to go beyond traditional trouble ticket systems that only address specific processes within the application lifecycle. ITIL says that all change requests made to IT should flow through the same process whether tactical or strategic. The flexibility of Mercury's workflow engine enables it to manage strategic changes such as new capital equipment purchases or as easily as managing day-to-day operational changes such as patch updates to production systems.

ITIL also recommends that changes be prioritized based on urgency and impact. Mercury enables this to happen through decision support tools for analyzing change risk and the impact of changes on the business. With Mercury BTO, IT services can be prioritized based on business impact, allowing those priorities to be observed within application management tools that span the entire application lifecycle. This enables IT decision makers to give greater attention to changes that will impact high-priority IT services.

To provide further support to business impact analysis, Mercury BTO includes a powerful application mapping capability that can automatically discover and map complex application and infrastructure relationships and maintain them in the Mercury Universal Configuration Management Data Base (CMDB). Other Mercury BTO solution components can then utilize the CMDB to ensure that the latest changes are readily understood by other processes in the service support discipline. The primary benefit to the change management process is in discovering how changes to shared components will impact various IT services. The Mercury Universal CMDB also helps administrators quickly troubleshoot problems by simplifying the analysis of IT service dependencies on system components.

### **Mercury Solution for Configuration Management**

Maintaining integrity of system components and IT services is a difficult challenge in complex data center environments that can include hundreds of systems. Configuration management technologies are an important part of the change management process because they can help prevent the approval of changes that might create unsupported or poor-performing configurations.

Mercury BTO specializes in automated configuration management technologies that can map applications to the underlying infrastructure and understand complex dependencies. Topology-based analysis can be used to quickly and accurately identify root-cause problems while automatically providing business impact analysis. With these capabilities, customers can dramatically reduce the time and resources required to manually map and maintain complex, dynamic service definitions. Mercury BTO uses the same automated tools in both change management and configuration management, making configuration management an integral part of the change management process.

### **Mercury Solution for Release Management**

ITIL recommends a complete lifecycle approach to releasing changes throughout design, development, deploy, test, verify phases. Ultimately, releasing a change requires developing the change, testing it for functionality, quality, and performance, and finally pushing the change into production. With core capabilities in software testing, Mercury provides advanced testing solutions that can automate functional and performance testing as a part of this process. Mercury BTO also provides the ability to automate the provisioning of tested changes as they are pushed into one or more production environments.

Mercury offerings for release management are much broader than simple automated provisioning and include:

- Detailed audit-trails to support regulatory compliance.
- Automated functional and performance testing using Mercury Quality Center.
- Verification of release implementation through the use of “before” and “after” snapshots that allow administrators to quickly determine if a release was successfully deployed.

**Effective Service-Level Management Requires Coordination with Availability and Problem Management**

Service-level management is a key process within the ITIL service delivery discipline and is intended to drive alignment between the business customer and IT. It starts with defining service-level requirements based on business needs and seeks to maintain and improve IT service quality through a constant cycle of agreeing, monitoring, and reporting upon IT service achievements. Specific procedures to eradicate poor service are also included as part of the service-level management process.

As shown in Figure 5, effective service-level management requires input from availability management and problem management as well as coordination with change management processes. Input from availability management and problem management can help ensure that the negotiated availability targets are both reasonable and achievable within budget. When executing a service improvement plan or negotiating service improvements with a customer, the service-level manager must know the expected availability of the current IT infrastructure as well as what would be required in order to improve service levels. Output from the availability and problem management processes can help the service-level manager make these determinations.

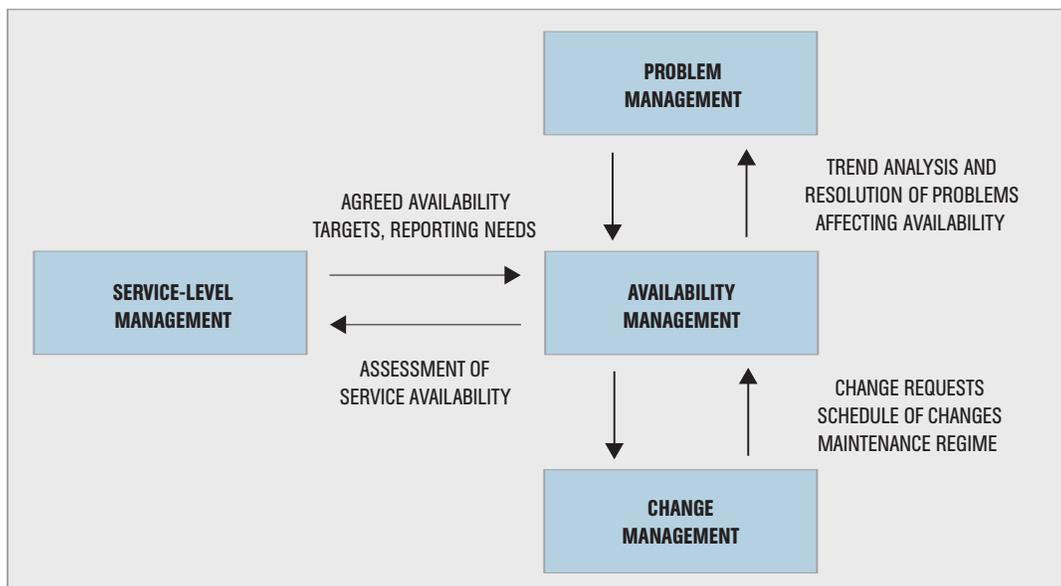


Figure 5: Effective service-level management requires input from the availability, problem, and change management processes.

Availability management can provide reporting and trend analysis regarding service-level achievements. Problem management can add estimates of resolution times and root-cause analysis of repeated incidents. With the help of root-cause analysis, the service-level manager can determine what changes will be required in order to reduce the occurrence of incidents. By factoring all of these inputs into service-improvement plans, service-level managers can avoid costly mistakes and can help build customer satisfaction by educating customers on the cost impact of requested service improvements.

The change management process is also important in service-level management because ITIL requires a single change management process for both strategic and operational changes. Both service-level management and availability management can generate requests for strategic changes such as a server consolidation effort or deployment of a software upgrade. These strategic changes can then go through a similar notification, review, and approval process as do more tactical change requests that typically come through the service desk or incident management processes.

Mercury BTO complements ITIL service-level management best practices by allowing organizations to manage by business-centric IT service levels while at the same time providing visibility into IT services from an end user perspective. The following sections provide more specific details on how Mercury BTO solutions address the areas of service-level management, availability management, and problem management.

**Service-Level Management**

The goal of service-level management is to negotiate, monitor, and report on service achievements and then to maintain and improve service quality. As shown in Figure 6, customer requirements are turned into detailed specifications and an execution plan. The execution plan is then updated based on data obtained by monitoring and reporting on existing service levels including feedback from the availability management, problem management, and change management processes. The final result of the service-level management process is a service-improvement plan that is based on customer needs and incorporates the user perspective by monitoring existing IT services.

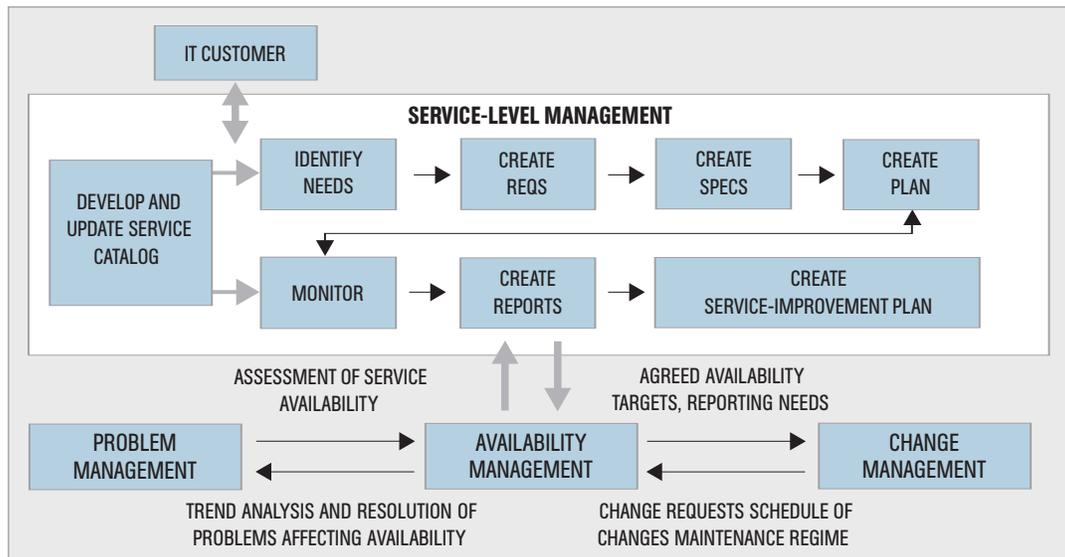


Figure 6: Service-improvement plans are generated based on both customer requirements and monitoring of the existing processes.

Mercury's service-level management offering provides an automated approach to all of the steps shown in Figure 6. While most system management software solutions monitor and manage based on system metrics alone, Mercury BTO enables organizations to proactively manage service levels from the business perspective and helps translate business goals into IT operational levels and service quality plans. Organizations can define realistic and quantifiable service-level objectives that reflect business goals.

Service-level factors such as availability and response time are directly monitored and reported upon to enable IT managers to factor end-user experience into their service improvement plans. Real-time visibility into current service levels with automatic notification features helps reduce the likelihood of SLA breaches by enabling administrators to address service incidents before end users experience problems.

#### **Availability Management**

Availability management is primarily concerned with optimizing delivery of service availability to meet business objectives. Mercury BTO addresses ITIL availability management by providing an extensive and integrated real-time dashboard that displays the entire availability of the business in terms that the business can understand. This comprehensive monitoring solution covers a wide range of applications and protocols and captures availability and performance thresholds from both end-user and system monitors.

An important aspect of Mercury's availability management solution is that it offers industry-leading total cost of ownership (TCO). System management costs are reduced not only because the agentless monitoring architecture avoids the need to install and maintain monitoring agents on every system, but also because the real-time dashboard displays results in terms of business impact.

Many system management dashboards simply provide an undifferentiated list of failed or impacted components, making it difficult to discern the most critical service problems. Mercury's real-time dashboard takes a top-down approach by highlighting business services that are impacted by service outages and enabling administrators to drill down to component levels as needed. This approach allows organizations to assess business impact directly while correctly prioritizing resolution efforts according to business goals as well as end-user impact.

### **Problem Management**

Problem management is primarily concerned with identifying the root cause of problems in order to prevent their recurrence and to ensure the stability of service levels. As with change management, Mercury BTO enables digitization of the problem management workflow to ensure repeatable and enforceable processes. The incident management processes can also be integrated with an existing trouble ticket environment to help reduce problem resolution time.

Mercury BTO includes deep diagnostic solutions for complex J2EE and .NET environments as well as for several specific business applications. These sophisticated tools enhance root-problem analysis by enabling engineers to drill down into details about application components that relate to a specific service incident and quickly pinpoint problem areas in software and hardware environments.

Mercury diagnostics solutions also work across the application lifecycle making it easier to replicate problems in test and debug environments and resolve them quickly to reduce Mean Time to Repair (MTTR). Diagnostics solutions are tightly integrated into Mercury Service Level Management™ and Mercury Application Management offerings, helping to accelerate the process of identifying, isolating, and resolving the root cause of any service or availability disruption.

### **Conclusion**

Mercury BTO can help improve alignment between IT and the business by enabling organizations to manage IT services from customer perspective and measure them from a user perspective. By optimizing application quality, performance, and availability across the lifecycle, Mercury BTO also helps drive service quality improvements in areas that will have the greatest impact on the business.

Mercury solutions demonstrate that achieving the ITIL goals of IT efficiency, IT effectiveness, and improved quality of service can best be accomplished by combining technology with the ITIL processes. The most critical ITIL processes of change management and service-level management can be significantly enhanced by unique technologies in Mercury BTO.

Mercury Change Management™ is a comprehensive approach to change management with integrated configuration management and release management. It offers several key advantages to businesses that are implementing ITIL processes by enabling businesses to:

- Provide five lines of defense for mitigating risk in critical applications and achieving compliance.
- Digitize IT workflows to enforce repeatable ITIL processes.
- Dynamically build and maintain a centralized configuration management database (CMDB) using automated processes that help ensure up-to-date and accurate mapping while providing significant time savings to administrators.
- Automate release deployment to help enforce proper configurations and consistent procedures.

Mercury Service Level Management™ provides an automated approach to all of the steps of ITIL service level management and incident management. It can greatly simplify the task of implementing these ITIL processes and extend their business value by:

- Driving alignment between the business customer and IT by allowing IT organizations to manage to business-centric service levels.
- Reducing breaches with real-time service-level visibility.
- Capturing availability and performance thresholds from both end-user and system perspectives.
- Resolving the root cause of problems quickly and with consistent results.

These unique capabilities in the Mercury BTO offering can help businesses extend the business value of their ITIL implementation while reducing risk through stronger alignment between IT services and business goals. Efficiency improvements that result from using industry leading tools for IT service management not only help reduce costs and improve IT productivity, but also help drive improved service levels and increased customer satisfaction.

Additional information about Mercury products and their impact on ITIL processes can be found in the first paper in this series entitled, “Driving ITIL Adoption with Mercury BTO,” which is available on the web at [www.mercury.com](http://www.mercury.com).

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