





## ■ INTRODUCTION

This document is part of a family of whitepapers produced by Managed Objects to describe service configuration management in the context of Business Service Management.

The whitepaper is an overview of the field and introduces the two product extensions to the Managed Objects portfolio that provide the associated functionality. There are two other more technical whitepapers in this family that cover the two products in more detail:

- [The Business Service Configuration Manager whitepaper](#)
- [The Business Technology Insight whitepaper](#)

## ■ BACKGROUND

Information and communications technology (ICT) departments are increasingly aware of their corporate responsibility. Generations of ICT evolution from initial process automation through to today's highly integrated enterprise resource planning applications, mobile collaborative communication and Internet-based interactions with suppliers, partners and customers have placed ICT firmly at the heart of corporate financial performance and competitiveness. With this central corporate dependence comes the responsibility for cost efficiency and the need for an appropriate quality of service (QoS).

This is not a trivial challenge. ICT systems have grown extremely complex, diverse and distributed. These are not the characteristics of systems that easily provide high QoS cheaply.

Many organizations have turned to the adoption of best practice procedures to both drive out cost and ensure QoS. The ITIL set of procedures is often considered as highly evolved processes deserving of the title best practice.

Experience has long taught ICT departments that the primary risk to QoS is change. Yet ICT systems are highly dynamic, problems are diagnosed and fixed, new technology and new systems are added, old systems are upgraded and withdrawn: in such an environment change is inevitable and unavoidable. It is believed that planned and unplanned change cause more than 80% of all outages. It is understandable then that best practice change management is considered key to ensuring high QoS. But even with best practice systems change is associated with risk.

Figure 1 illustrates two aspects of this risk:

- Planned change is subject to the full vigour of the change management process in which understanding of impact is sought, change is planned and approved. A key challenge for risk avoidance here is to accurately identify the services that could be impacted by change. But unscheduled change also occurs and is a greater risk altogether. It typically is the understandable response to rapidly fix a damaging problem. But without the due diligence of the change management process, a high proportion of unscheduled changes result in introducing further disruption to the system and services it provides.
- The diagram also illustrates that not all of corporate ICT resources are known. For a variety of reasons including the results of mergers and acquisitions, organizational changes, historically lax asset tracking etc. some assets are unknown to the ICT department. The risk is: if ICT does not know its there then they can hardly interpret the impact of change.

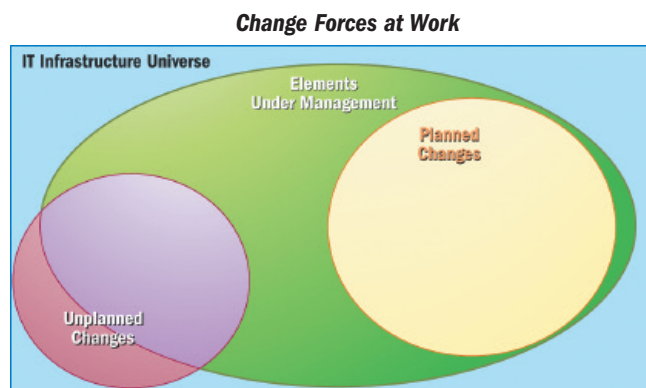


Figure 1: Changes in an IT infrastructure

Figure 2 illustrates the forces of people, process and technology that can be used to balance the risk of change to the quality of ICT services. The balance determines the QoS.

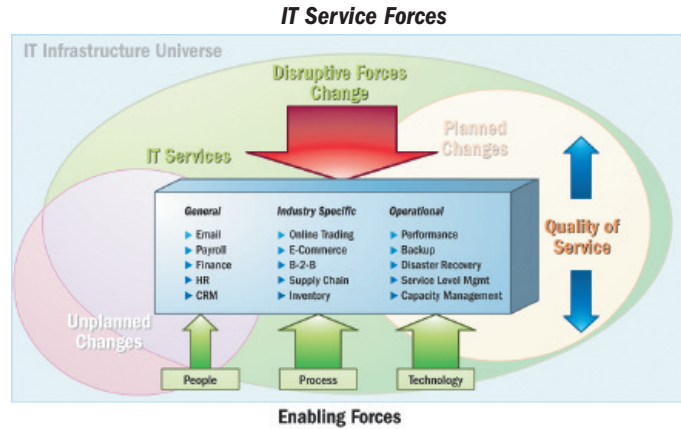


Figure 2: How Changes Affects IT Services

Because salaries are a continuous drain on costs the balancing force of deploying more people has to be used with caution. Technology, although not a continuous expense like salaries, also introduces cost and has to be chosen with care. No wonder many organizations have focused their risk management strategies on process improvement which accounts for the rise in popularity of best practice adoption.

Best practice strongly promotes the concept of service and service delivery by IT to the business. This is absolutely correct. It is only at the level of services that ICT can provide value and alignment with the business.

The service perspective is fundamental to the design of the system, the selection of components and the operational procedures. For instance an email service may require a system design that can provide 24x7 cover, whereas a payroll system is only critical on one or two days a month. Hence the impact of a change to a component of an email system would be critical whenever it was performed, whereas a change to the payroll could be safely performed and fully tested over quite an extensive period.

Figure 3 represents the best practice theme of a set of operational processes: the managing of incidents, problems, changes etc.; that are necessary to maintain the QoS defined for each service. An aspect of this approach is the concept of a configuration management database (CMDB). This is a central and common repository for all configuration information pertaining to the components of a service delivered by ICT to the business.

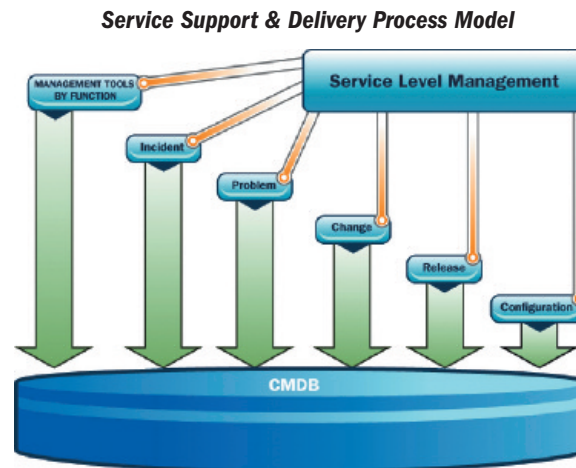


Figure 3: Process Maturity and ITIL

However, in reality the deployment of best practice is constrained in two ways, as illustrated in Figure 4:

- The tools used to enhance the automation within each process tend to operate at the component level. (For instance, we get events from ICT components and not from the service/s that are affected. Change management would benefit from being able to understand the “chain of impact” up to the affected services when an infrastructural component is to be changed).
- The tools deployed typically have their own database and do not integrate with a central CMDB. This leads to data inconsistencies and divergent process perceptions of what is in the system with potentially dangerous consequences.

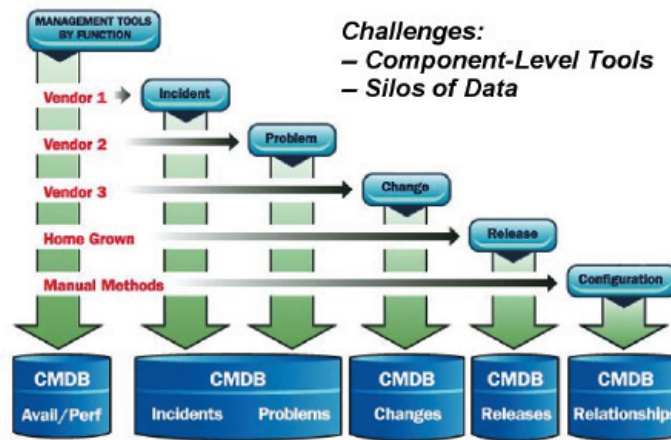


Figure 4: Complexities of Today's World

## SERVICE MANAGEMENT

Managed Objects’ strategy has been to accelerate the maturing of best practice by enabling existing infrastructure management tools to be integrated to provide a service perspective and share a common configuration repository. The strategy has produced a suite of products that bring a service perspective to the operational disciplines all sharing a common source of configuration data: a federated CMDB, as shown in Figure 5. The vCMDB uses reference pointers to other databases in true federation rather than deploying ETL to create a single CMDB.

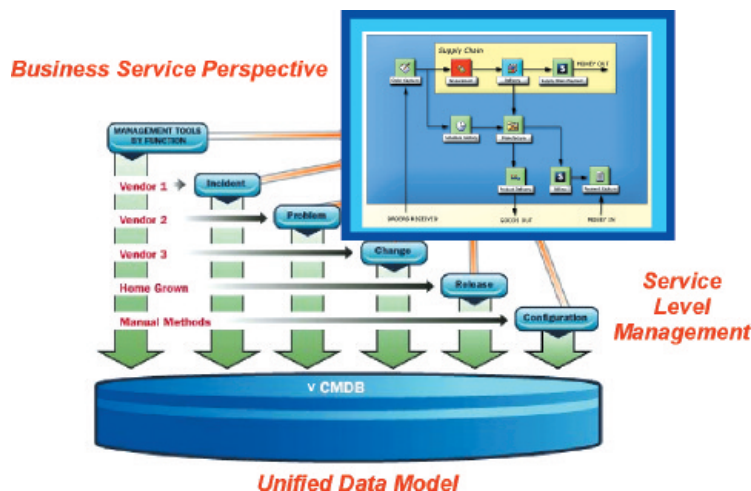


Figure 5: Managed Objects Accelerates ITIL Adoption

The suite of solutions is based on a common architecture, at the heart of which is a state based object model. This Business Service Object Model™ is fundamentally a hierarchy of different object classes each with their own state determining rules. At the bottom of the hierarchy are two “building block” state objects: technical components (or more precisely Configuration Items (CIs) with their operational state) and data objects (e.g. inventory of a particular component is it below a re-order threshold).

These building block objects can be grouped together to form composite objects e.g. a data centre which can have rules associated to determine it’s operational state. The hierarchy can be built to whatever degree of complexity is required to reflect a managed object, for instance, a share trading service with all of the applications, middleware, databases, servers, networking etc.

The state of CIs are derived by using a standards-based object wrapping of traditional infrastructure managers e.g. Tivoli, HP Openview, Unicenter etc. Dashboards are provided for monitoring the state of such objects which enables **a service perspective to be added to incident management**. Whereas data objects are mined from databases or flat files enabling **a service perspective to be added to data management**.

From the state-based object model, service level agreements (SLAs) can be monitored directly, automatically and in real-time for any object from a CI right up to a service. This facility is known as Business Service Level Manager™ (BSLM) and brings a **business service perspective to Service Level Management (SLM)** which has been traditionally constrained to manual techniques and a bias towards technical SLAs.

## ■ SERVICE CONFIGURATION

What we have described so far has been applied successfully to numerous critical services in some of the world’s most demanding ICT environments in the financial, telecommunications, military, retail, manufacturing and logistics sectors. But these deployments can best be described as well defined services. For instance where a service catalog exists and/or a configuration data source which accurately maps CI to services. In such cases the mapping of CI to services can be semi-automated by data mining from available sources.

However, such well defined services are the exception and for the majority of cases the mapping of CIs to services is a more involved process that could be a deterrent to adopting BSM.

Consequently, Managed Objects has added Business Service Configuration Manager™ (BSCM) to their BSM portfolio to simplify, speed and extend its application to less well defined services. BSCM not only automates the building and maintenance of Business Service Views™ (BSVs) and virtual configuration management databases (vCMDB™) it can discover CIs and detect changes, alerting operators when unscheduled changes occur and thereby reduce operational risk.

BSCM enables available sources of configuration data to be mined and/or discovered, their inputs combined, differences reconciled, a service to be mapped, BSVs to be automatically generated and a federated CMDB based on the central point of reference the vCMDB created.

A variety of service discovery tools exist that seek to find topology and relationship information, each with their relative merits. Some are software-based others appliance-based, some agentless and some require agents, some are best suited to discover in-depth information giving increased details whereas others discover rapidly and broadly. Managed Objects BSM platform includes adapters to integrate with the leading discovery tools as shown in Figure 6.

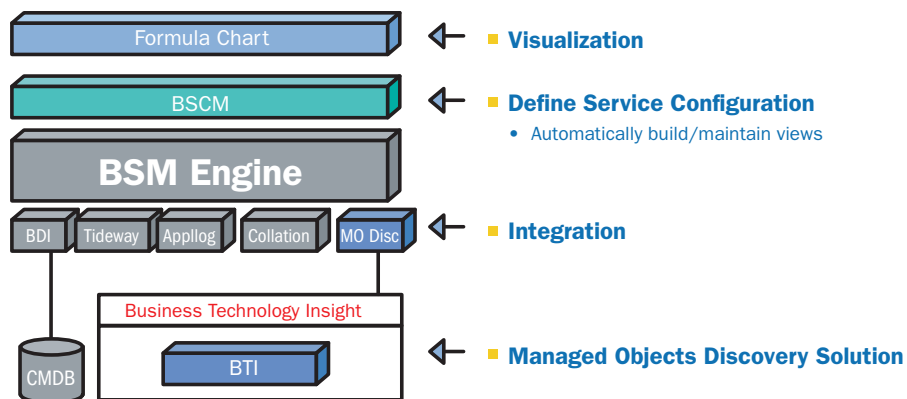


Figure 6: BSCM and Discovery Tools

Some classes of discovery add the further ability to automatically determine when change has occurred. A member of this class, produced by Managed Objects, is called Business Technology Insight™ (BTI). Through BTI, service discovery is achieved by using a hardware device plugged into the monitoring port on routers that provide a passive, agentless discovery mechanism. BTI inspects packets determining where they came from, where they are going and by deploying a fingerprinting mechanism identifies which services are involved. Over 200 fingerprints exist and here is a facility within BTI to create fingerprints for the identification of additional services. The advantage of BTI is its passive nature which allows changes in topology or relationships to be detected and reported.

BSCM provides 5 facilities:

- **Mining**  
 This is the obtaining of configuration information from the various sources that are available: e.g. configuration databases, management tools and discovery tools; to create the vCMDB.
- **Modeling**  
 Provides service modeling by linking service definitions defined in service catalogs and/or service inventories to be linked to the vCMDB.
- **Service definition**  
 Provides the means to define rules for lining together the service model with CI enabling the automated creation and maintenance of service views and vCMDB to changes in the CIs.
- **Reporting**  
 Provides various mechanisms to bring to attention important conclusions relating to capacity, impact analysis, usage and relationship dependencies.
- **Business service configuration alerting**  
 Change oriented data notifications, reconciliation recommendations and audit alerting.
- **Reconciliation**  
 A means to identify inconsistencies in various configuration, asset, inventory databases identifying CI's that are not being monitored, which is a form of "gap analysis." For instance reconciliation can identify trouble tickets (using a help desk as a data source) that have no comparative technical management details or those CIs not being monitored as illustrated in Figure 7.

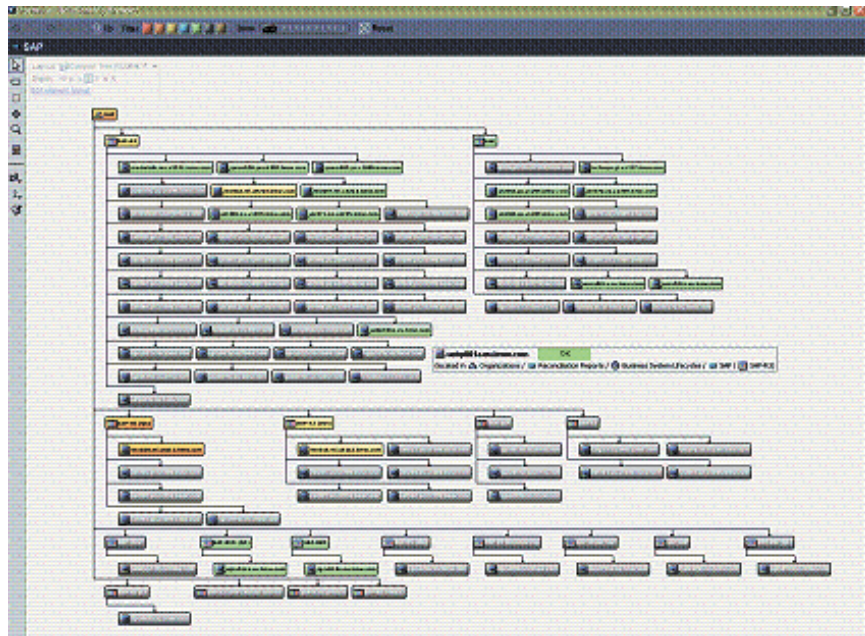


Figure 7: Grey icons have no status information

## ■ BENEFITS

BSCM is a valuable enhancement to BSM bringing a number of significant benefits:

- It improves change management and reduces operational risk:
  - Detecting change thereby enabling unscheduled change to be detected.
  - Enabling change history to be analyzed.
  - Allowing the impact of planned changes to be understood.
- Further reduces operational risk by:
  - Ensuring configuration consistency across all processes
  - The improvement in change management
- It simplifies, speeds, expands the potential and reduces the total cost of ownership of BSM by automating the creation and maintenance of business service views and the underlying mapping.
- It provides a self sustaining federated CMDB for those organizations seeking to deploy this key component of ITIL.
- It brings more IT elements under management by detecting all service participating assets even those that may not have been in any inventory registry, i.e. "It enables you to find out what you don't know."
- Automates the time consuming and error prone parts of asset and inventory administration further improving overall efficiency and effectiveness.
- Provides the reconciliation facility to identify configuration and management inconsistencies

Effectively these benefits reduce costs and improve service quality.

## ■ SUMMARY

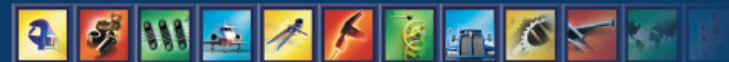
Internal and external providers of ICT services are responding to the dual challenge of improving service quality and reducing cost by adopting best practice processes. Change management processes are particularly important because of the inevitability of change and the high incidence of it introducing faults leading to system downtime.

However in adopting best practice users often find the tools they deploy to automate the processes have two limitations:

- They operate at the level of components rather than the services, contrary to best practice principles that promote the importance of service perspective
- Most tools maintain their own database reflecting their own perspective of the configuration of the system they operate on. This is a dangerous practice leading to potential synchronization problems and contrary to best practice advice to adopt a central shared configuration database

BSM with its new component BSCM removes both of these limitations of existing tools by integrating with them, thereby protecting existing investment, and elevating them to provide a service perspective and a vCMDB.

The discovery aspect of BSCM also introduces the benefit of finding those components that were not part of any inventory register and the particular discovery tool BTI adds the ability to detect change and generates configuration change alerts for operator attention and action.



## ■ ABOUT MANAGED OBJECTS

Managed Objects is the Business Service Management Company. Business Service Management (BSM) aligns IT with the business by integrating network, system, application, end user, and business metric information into real-time business service dashboards. Through Managed Objects' BSM platform, companies effectively monitor, manage, and report on the services IT delivers to the business - services like online trading and e-commerce. Consistently acknowledged by the analyst community as best in class, Managed Objects has more BSM implementations in place than any other company. That is why AIB, Auchan, CSC, Credit Suisse, DISA, Fidelity Investments, JPMorganChase, Progress Energy, Reuters, TIAA-CREF and other global organizations rely on Managed Objects' BSM technology. **For more information, visit [www.managedobjects.com](http://www.managedobjects.com).**



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