



ACTIVATE BUSINESS WITH THE POWER OF I.T.™



## Between the Bazaar and the Cathedral

Where ITIL®, Business Service Management, and Open Source Converge

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## Executive Summary

The world of open source differs radically from the traditional IT environment. Ten years ago, Eric Raymond, at that time a relatively unknown programmer, presented a paper entitled “The Cathedral and the Bazaar.”<sup>1</sup> In the paper, he likened an open source project to “a great babbling bazaar of differing agendas and approaches.” He compared open source software to traditional software, which he said is “built like cathedrals, carefully crafted by individual wizards or small bands of mages working in splendid isolation.”

Many IT organizations are pursuing open source “bazaar” software for a number of reasons. It holds the promise of lower cost of ownership because of lower acquisition costs. In addition, a huge number of developers can participate in a software project, speeding the development cycle, creating continuing enhancements, and quickly fixing problems.

Despite the advances made in recent years, however, open source software cannot provide *all* the capabilities required by today’s enterprises. As a result, IT organizations have to deploy and maintain both open source and traditional software, at least for the foreseeable future. Many organizations already have open source platforms, applications, and databases running side by side with proprietary platforms, applications, and databases. In fact, according to Gartner Research, “By 2012, 80% or more of all commercial software will include elements of open-source technology.”<sup>2</sup>

All IT organizations, regardless of their software mix, are under intense pressure to improve IT service and reduce costs by streamlining the way they manage the services IT delivers to the business. A key trend in this area is the adoption of best practices for service management, such as those described in the IT Infrastructure Library® (ITIL®). Many organizations have deployed ITIL-based processes in a variety of IT functional areas, including incident, problem, change, release, configuration, and asset management. Many organizations are also using Business Service Management (BSM) software solutions as their preferred approach for implementing ITIL processes. BSM is the most effective approach for managing IT based on business priorities.

IT organizations must merge open source, ITIL, and BSM processes and software to create an effective service management strategy. That means they need to implement BSM solutions that encompass service management of both traditional systems and open source software. Moreover, they must look for BSM solution vendors that make at least a part of their source code available to the open source community, opening the doors of the cathedral and welcoming in the open source bazaar.

This paper:

- > Describes the convergence of open source, BSM, and ITIL, and examines the impact of that convergence on IT organizations
- > Discusses the importance of implementing a holistic BSM solution that encompasses both traditional and open source components
- > Presents the criteria for selecting BSM solutions and a BSM solution vendor to ensure support for an effective holistic approach

## ITIL and BSM Meet the Bazaar

Deployment of open source software began with operating system and Web server software — such as Linux®, JBoss, and Apache — and then expanded to include personal productivity software, such as OpenOffice.org. Open source software is continuing to move up the stack, and has now made its way into enterprise applications, such as SugarCRM (for customer relationship management), and Pentaho and JasperSoft (for business intelligence). In January 2008, Sun™ acquired the open source database company, MySQL AB, with a database that is considered to be one of the core components of open source server infrastructure.

As open source matures, many IT organizations are deploying open source operating platforms, Web server software, applications, and databases alongside proprietary software. At the same time, many of these organizations are embracing ITIL to improve service and lower costs — and are adopting BSM as their preferred approach for implementing ITIL.

BSM is considered the most effective approach for managing IT from the perspective of the business. As such, it aligns directly with the central theme of the latest version of ITIL: integrating IT with the business. BSM solutions combine best-practice IT processes (including ITIL), automated technology management, and a shared view of how IT resources directly support the business. These solutions help ensure that the actions the IT staff takes and the decisions it makes are based on what will create the greatest value for the business.

The bottom line is that many IT organizations find themselves in the middle of the convergence of open source, ITIL, and BSM. The implications are significant. A successful service management initiative, therefore, must rationalize and combine open source, ITIL, and BSM.

### Open Source Solutions for Service Management

With the success of the open source software movement, open source projects have expanded into many additional areas, including open source solutions for service management. However, open source solutions for service management have not yet matured to the level of other open source software. The open source service management ecosystem consists primarily of users, and not developers (80 percent are users). While tens of thousands of open source projects have been launched in the service management arena, 60 percent are considered inactive. What’s more, 70 percent of the projects are authored, managed, and supported by only one person.

Viable open source monitoring, discovery, and software provisioning solutions do exist, with monitoring being the most mature area. However, these solutions have significant shortcomings with respect to BSM and ITIL. They fail to address certain key areas of service management, such as service level management and incident management. In addition, none of them addresses all three key categories of service assurance, service support, and service automation — areas that together provide the ability to achieve end-to-end service management.

## Open Source Solutions for Service Management Come Up Short

There are a number of shortcomings with the open source solutions for service management that are available today, particularly for IT organizations looking to adopt an enterprise-wide BSM approach that supports ITIL best practices.

### Lack of Full Coverage

IT organizations typically have heterogeneous environments that include open source and proprietary platforms, servers, and applications. Currently available open source solutions for service management do not provide coverage for all infrastructure components (for example, they do not support mainframes), so they cannot provide full support for heterogeneous environments. Table 1 shows the platforms supported by select open source solutions for service management.

| Open Source Solution | Linux | Windows | UNIX® | Mainframe |
|----------------------|-------|---------|-------|-----------|
| uXcomm.com           | •     | •       |       |           |
| Nagios               | •     |         | •     |           |
| Open NMS             | •     | •       | •     |           |
| Zenoss               | •     | •       | •     |           |
| GroundWork           | •     |         |       |           |
| Hyperic              | •     | •       | •     |           |
| Blue                 | •     | •       | •     |           |
| NetDirector          | •     |         | •     |           |
| Zip Tie              | •     | •       | •     |           |
| OpenQRM              | •     |         | •     |           |
| Jboss Fed SSO        |       |         |       |           |
| Java Open SSO        |       |         |       |           |
| Liberty OST          |       |         |       |           |
| Apache               | •     | •       | •     |           |

Table 1. Platforms managed by open source solutions for service management

Heterogeneity will remain a fact of life for at least the foreseeable future and probably well beyond. Because few organizations will opt for a totally open source approach, IT organizations will not be able to adopt a totally open source approach to service management — at least not until strong heterogeneous platform support is provided by open source solutions for service management.

### Lack of ITIL Support

Another limitation to using open source service management software is that many open source solutions provide little or no support for ITIL. Moreover, of those few, even fewer integrate with a configuration management database (CMDB), a fundamental component of the configuration management system (CMS) recommended by ITIL. (The CMDB defines a set of configuration items [CIs] and maintains all the components of the IT environment — technology assets, processes, and people — as CIs. The CMDB maintains important information that helps IT understand the relationships of the components of the IT environment to each other and to the services IT provides to the business.)

Table 2 shows open source solutions that support ITIL and/or a CMDB.

| Open Source Solution | Support ITIL | Support CMDB |
|----------------------|--------------|--------------|
| uXcomm.com           |              |              |
| Nagios               |              |              |
| Open NMS             |              |              |
| Zenoss               | •            | •            |
| GroundWork           |              |              |
| Hyperic              |              |              |
| Blue                 |              |              |
| NetDirector          |              |              |
| Zip Tie              | •            | •            |
| OpenQRM              |              |              |
| Jboss Fed SSO        |              |              |
| Java Open SSO        |              |              |
| Liberty OST          |              |              |
| Apache               |              |              |

Table 2. Support for ITIL and the CMDB<sup>3</sup>

Additionally, most open source solutions for service management have been designed as point solutions and are siloed, without process integration across IT disciplines (violating a fundamental tenet of ITIL). For example, without the integration of change, release, and configuration management processes, IT organizations cannot ensure that changes are properly approved and implemented. This

type of process integration can also ensure that configurations don't drift out of compliance with approved standards.

### Lack of Technology-to-Business Mapping

Another major shortcoming of currently available open source solutions for service management is that they do not map underlying IT infrastructure components to the business services and business processes that they support. IT needs this information to determine the business impact of events in the IT infrastructure, a fundamental requirement for ITIL and BSM. (A central theme of ITIL version 3 [ITIL V3] is that everything IT does should be done in view of its value and impact on the business.)

### Putting It All Together with BSM

As IT organizations pursue the use of open source solutions for service management software, they must consider how this impacts their ITIL and BSM initiatives. Organizations that have implemented, or plan to implement, open source software should choose BSM solutions that enable IT to manage the entire IT infrastructure as a unified whole.

By taking a holistic approach, IT will be able to deploy an integrated system of BSM solutions that permit the management of the entire IT infrastructure as a unified whole, based on ITIL process guidelines and leveraging open source solutions for service management where appropriate. By following this approach, IT can ensure that service management processes are integrated within and across IT functional areas, thus enabling service management from a business perspective.

### Choosing the Right BSM Solutions

Even if it means choosing proprietary software, look for a BSM solution that provides an integrated infrastructure of BSM applications that implement ITIL-compatible, best-practice processes for managing service delivery and service support. The solution must address all areas of service management, including service catalog management, service level management, capacity management, availability management, IT service continuity management, and information security management.

An effective BSM solution provides integration across all BSM applications and is built on a CMDB that permits data sharing across all applications. This approach includes:

- > *Automatic discovery solutions* that populate the CMDB with information about the components of the IT infrastructure and keep it updated as changes are made.
- > *Data adapters* that take data from various repositories in the IT infrastructure, such as asset databases and network directories, and integrate the data into the

CMDB. For example, an adapter may take data from an HR system to permit the identity management application to determine employees' roles for the purpose of granting access privileges.

- > *Monitors* that permit the service management applications to track the performance and availability of the IT infrastructure components under management and generate alerts when out-of-limit conditions are detected.
- > *Connectors* that link the applications to various systems across the enterprise, permitting the solutions to interact with these systems. For example, a connector can connect an identity management application to user accounts on various enterprise applications to permit automatic provisioning of these applications to users.

With the introduction of ITIL V3, the CMDB is now part of a CMS. ITIL defines a CMS as "a set of tools and databases that are used to manage an IT service provider's configuration data. The CMS also includes information about incidents, problems, known errors, changes, and releases; and may contain data about employees, suppliers, locations, business units, customers, and users. The CMS includes tools for collecting, storing managing, updating, and presenting data about all configuration items and their relationships...."<sup>4</sup>

### Choosing the Right BSM Solution Vendor

At first glance, BSM solution vendors may believe that opening the doors of the cathedral to the bazaar may seem ill advised and involve a giveaway of intellectual property that provides the basis for the company's revenue and profit. Vendors, however, should recognize that participation in the open source community presents an opportunity that can result in benefits to their customers.

IT organizations should look for a BSM solution vendor that works with third parties to participate in the open source community. Important indicators of the vendor's commitment to open source include a demonstrated participation in the open source development community (the extent to which the vendor's solutions interface with open source) and the availability of convenient and permissive open source licensing.

### Open Interfaces

Most of the BSM solution vendors' high-value intellectual property is in their service management applications and the CMDB. The applications implement the ITIL-based service management processes and provide most of the vendors' product differentiation. As a result, BSM vendors are reluctant to release their applications to the open source community.

Automatic discovery and monitoring tools, data adapters, and connectors, on the other hand, serve primarily as interfaces to and from the BSM applications. The main value comes from their ability to integrate the BSM applications into a variety of customers' IT infrastructures. The wider the range of integrations allowed by the gateways, the higher the value of the BSM applications.

Look for a BSM solution vendor that opens up the interfaces of its BSM solutions to the open source community. This permits the vendor to leverage the open source community, engaging a large number of open source developers to extend the range and capabilities of its BSM offerings — at little or no additional cost. For example, the open source community can extend the range of the discovery tools, monitors, adapters, and connectors to cover additional IT infrastructure components through simple plug-ins to the BSM solutions. That adds to the number of IT infrastructure components that can be managed, and can propel the solutions into entirely new component areas, such as VoIP, photocopiers, and specialty devices. The result is a significant increase in the variety of hardware and software supported by the solutions — and that translates into an increased ability to keep up with the rapid advancement of technology.

Customers can take advantage of the continually extended capabilities of the vendor's BSM offerings that are developed by the open source community. In addition, through open source development, customers can directly enhance the vendor's solutions in a variety of ways. They can extend the coverage of the BSM solutions to additional devices in their IT infrastructures. They can add capabilities to meet unique requirements. And they can integrate open source solutions for service management and homegrown service management software, such as scripts, with the vendor's BSM solutions to create a unified BSM solution infrastructure. The possibilities are many and exciting.

### Nurture Open Source Developers

To fully leverage the power of the open source community, it is essential that the BSM vendor have a strong commitment to participating with open source developers. Consequently, IT organizations should look for a vendor that has a demonstrated commitment in this area. One indicator of this commitment is that the vendor maintains an open source developer network that deals specifically with the vendor's contributions to the open source community. This could include a Web site that makes available a variety of resources, such as software libraries, development tools, a knowledge base, application programming interfaces (APIs), blogs, and forums. It is important that the vendor take an active and direct role in the developer network, such as by initiating and supporting certain projects.

Another indicator is that the vendor makes technical support available to open source developers working on the vendor's open source solutions. This might include periodic developer conferences in which open source developers have a chance to work directly with the vendor's engineers.

It is also important to choose a vendor that provides resources to help open source developers gain a better understanding of ITIL and how to work with it. Vendors can do this by offering ITIL educational services, and initiating and supporting open source ITIL projects.

#### **Offer convenient and permissive licensing**

Finally, look for a vendor that offers convenient and permissive open source licensing. Open source licensing requires a single, permissive OSI-approved license for all open source projects that the vendor initiates. Ideally, that license would be a Berkeley Software Distribution (BSD) license, because it is the most permissive and doesn't mandate what developers can or must do with the vendor's code they use.

## **Conclusion**

Many IT organizations are already taking advantage of the promise of open source software to reduce costs, deploying it alongside traditional proprietary software. Like all IT organizations, those deploying open source software are under considerable pressure to meet the challenge of improving service delivery, while simultaneously cutting costs. Many are turning to ITIL to meet the challenge. The problem is that open source solutions for service management have not matured to the level of proprietary solutions, let alone to the level of BSM solutions that support ITIL.

By selecting the right BSM solutions and the right solutions vendor, IT organizations can put in place a single, holistic BSM approach that encompasses both traditional and open source IT infrastructure components. In that way, IT can take advantage of the many benefits of the merging of the bazaar and the cathedral.

## **Endnotes**

- 1 For information on *The Cathedral and the Bazaar* (now in book form) by Eric Raymond, visit [www.catb.org/~esr/writings/cathedral-bazaar/](http://www.catb.org/~esr/writings/cathedral-bazaar/).
- 2 Gartner Research, "Gartner's Top Predictions for IT Organizations and Users, 2008 and Beyond: Going Green and Self-Healing," M. Driver, January 2008.
- 3 Table 2 is based on information from the individual solution Web sites.
- 4 ITIL® Glossary V3, 1.24, May 11, 2007, [www.best-management-practice.com/gempdf/ITIL\\_Glossary\\_V3\\_1\\_24.pdf](http://www.best-management-practice.com/gempdf/ITIL_Glossary_V3_1_24.pdf). See Configuration Management System.



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