The Growing Importance of Management Standards

The Management Landscape

It's no secret that today's organizations are being forced to do more with less. In the information technology (IT) environment, this means companies must coax ever more value out of existing systems.

As the need to stretch resources runs into yet another year, the computing terms that have emerged – such as "autonomic," "adaptive," "on demand" and "service oriented" – all have something in common. These terms articulate end users' overwhelming need to require more from technology investments. No longer can so-called best-of-breed solutions operate in a "silo." Customers are demanding that technology deliver integration and the ability to adapt in a variety of situations. Companies are looking to build a corporate infrastructure that allows different applications to exchange data and processes – regardless of the operating systems or programming languages underlying those applications.

At the heart of this new mandate for flexible computing, the key to success is standards. Standards play a critical role in management, without which – in the current heterogeneous environments that are the norm – there could be no integration, no flexibility and no end-to-end interoperability.

With organizations struggling to control costs and manage complexity in a diverse technology environment, standards play an even more active role. There is a growing need to operate and manage a business in terms of the business' processes and services (both required and provided). End-to-end management – across multiple components – in a distributed setting is both a reality and a requirement. It is no longer sufficient to manage personal computers, servers, subnets, the network core, storage and software in isolation. These components all interoperate to provide connectivity and services. Information passes between these boundaries. Management must pass across these boundaries, as well.

Standards allow vendors to collaborate to provide customers with integrated and consistent information, processes and operations. This open framework enables interoperability of managed entities across vendor boundaries. For the customer, an immediate benefit of management standards is the reduced operational costs from a simplified IT infrastructure.

Why Require Standards?

When evaluating new technology investments, executives now face increasing pressure to ensure that those investments remain viable for years to come. With IT staff resources slim and growing slimmer, custom programming must be kept to a minimum.

While the pace of multi-organizational collaboration and outsourcing has not slowed, the resources available have been greatly minimized. Managing systems across the distributed enterprise has become more taxing, while the assets available to address this issue have been shrinking.

In this environment, products based on technology industry standards deliver the continuity organizations require. Standards-based management allows end users to select the products that best suit their needs today, while helping ensure that no proprietary hassles arise when new systems are put in place in the future.

What Standards are Important?

The Common Information Model (CIM) is the breakthrough standard for the exchange of management information in a platform-independent and technology-neutral way. DMTF, developer of CIM, is the technology industry organization leading the development, adoption and interoperability of management standards and initiatives for enterprise and Internet environments.

CIM-enabled products reduce the cost of management by alleviating the challenges associated with managing today's complex, heterogeneous technology environments. This is accomplished through use of standardized semantics, much like a dictionary of management terms, describing an organization's computing and networking environments (its hardware, software and services). These semantics are defined by the object-oriented Common Information Model. All managed elements

are positioned within this model, which streamlines the integration of data across products, vendors and management domains. Key technology vendors and affiliated standards groups that implement CIM provide users with more integrated, cost-effective and less crisis-driven approach to management.

The DMTF's advanced approach leverages existing Web services and encoding standards for the interoperable exchange of management information. DMTF works closely with other standards bodies to help ensure that its standards interoperate with the standards of other groups. Key industry players – including CompTIA, Consortium for Service Innovation (CSI), Federation Against Software Theft (FAST), Global Grid Forum (GGF), Interoperability Technology Association for Information Processing (INTAP), IT Service Management Forum (ITSMF), Network Applications Consortium (NAC), Northwest Entergy Efficiency Alliance, The Open Group, Organization for the Advancement of Structured Information Standards (OASIS), Storage Networking Industry Association (SNIA), TeleManagement Forum (TMF) and the World Wide Web Consortium (W3C) – are all closely aligned with DMTF and its initiatives.

CIM is also organized using concepts from other standards, such as the Internet Engineering Task Force's (IETF's) standard Management Information Base (MIBs) and the International Telecommunication Union (ITU). Other standards are not ignored or dismissed, but are reused and mapped into CIM – giving users a complete management solution.

Products based on DMTF's CIM enable end-to-end management, including hardware, systems, software and services and the relationships between them. By enabling this end-to-end multi-vendor interoperability in management systems, CIM streamlines integration for users and reduces costs.

To achieve successful integration and use of management data – both within an end user's business and IT

departments, and between management vendors – a consistent information model is a required, basic building block. CIM provides this information model for the enterprise and Internet management domains. Through CIM, more advanced customer solutions for problems like inventory tracking, root cause analysis, and cross-vendor administration can be cooperatively developed.

The Goals and Benefits of CIM

Of special significance is CIM's facilitation of data reuse, delivering consistency of data across products and releases of products. This means that cash-strapped end user organizations can contain costs by using a single set of management tools and applications, which need not change for each product release.

CIM is designed to help minimize the impact to the management environment as new technology is introduced. By giving customers the freedom to change vendor implementations with minimal impact to the customer site, CIM helps users avoid issues associated with single vendor, proprietary solutions. Because CIM is designed to be "technology-neutral," it delivers the flexibility needed in the current corporate environment to help ensure that existing systems are compatible with future offerings from across the industry.

Another goal and benefit of CIM is its flexibility and support for extensions. This means a vendor or end user can build on CIM to cover particular management areas. These extensions can be created as required to describe and customize a particular networking environment.

Using CIM, tools can now focus on managing, versus bringing together "silos" of data. Coupling the model with standard access mechanisms creates a complete management environment. Vendor products that support CIM are delivering more value to the end user, since the customer receives the many benefits of standard-based design.

Closing Remarks

In today's business climate, organizations must invest wisely and require flexibility from their technology environments. The uncertainty of the future makes this agility even more important, as no one is clear on what innovations are to come.

For forward-looking IT customers, this means ensuring that new technology purchases support the leading distributed management standards.

The costs of managing technology without standards can be daunting. It is well known that the total cost of ownership (TCO) of technology extends well beyond the purchase price. Implementing standards-based systems in the management arena means the user is receiving the input and expertise of the industry's leading vendors, ensuring that the systems are compatible with offerings from across the industry in the future.

As businesses struggle to stay "above water" in turbulent economic times, better business processes – enabled by IT investments – continue to give the competitive advantage. To control costs and manage complexity in a diverse technology environment, a standards-based approach can be the key to success.

Additional Reading

DMTF Standards and Terminology Tech Note - http://dmtf.org/download/educ/technote_std_overview_v1.pdf

The Common Information Model Tech Note - http://dmtf.org/download/educ/TechNoteCIM.pdf