

# COMPUTERWORLD TECHNOLOGY BRIEFINGS

## IT SERVICE MANAGEMENT

### **Quick Insights on Consolidation, Virtualization, Spending, Business Service Management, SLAs and Cloud Computing**

Today's mid-tier enterprises are charged with the challenge of providing mission critical services in the face of increasing technological complexity and modest budgets. Aligning resources, employing best practices and leveraging technologies can help IT organizations cut through the complexity, be more responsive to business requirements and meet service level expectations.

This guide is designed to provide mid-tier enterprises with a quick read and insights on the most pressing issues, practices and considerations regarding consolidation, virtualization, spending, business service management, service level agreements and cloud computing. Each topic provides pertinent takeaways and an online reference to facilitate further examination. You'll also learn how advancing IT organizations from technology-based cost centers into service-oriented business enablers can yield greater support of business requirements, reduced risk and improved operational efficiencies even in the midst of budget cuts and added resource constraints.

Brought to you compliments of

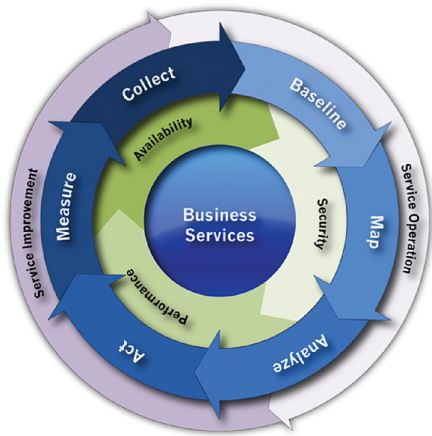


### **Data Center and IT Service Management Syndrome**

#### **Enabling Data Center and IT Service Management for the Mid-tier Enterprise**

Companies rely on the data center and IT to provide mission-critical services like e-mail, Web and voice. However, assuring service delivery and reliability becomes increasingly difficult as the necessary growth in data center virtualization, distributed and mobile access, cloud-based applications and outsourced service technologies fuel operational complexity. Data center and IT organizations respond by evolving processes and building out workgroup specialties such as networks, operations, applications, security and help desk that serve to scale management. Unfortunately, this can also produce departmental silos, reduced IT responsiveness and blurred service capacity. Furthermore, enterprise expansion often drives the procurement of specialized tools designed to manage the infrastructure from a component, rather than a service, perspective.

The growth in data center and IT complexity, potential blind spots and inefficiencies due to operational silos, and disparate IT management tools — or in some cases the lack of tools in mid-tier IT organizations — contribute to service delivery risks, outages and degradation. These issues diminish an effective means to monitor and optimize service levels, manage change, quickly find and resolve the root cause of problems, and automate compliance efforts.



To improve service reliability, organizations must be able to see and manage all aspects of performance, availability and security related to that service. This requires a fully integrated approach to capture, correlate and manage operational data, consolidate core IT management functions, and automate service definition and SLA tracking. Until now, available

IT management tools have either been too expensive, very labor intensive or lacking in required integration.

The AccelOps all-in-one data center and IT service management solution provides infrastructure oversight and controls to advance service reliability across performance, availability and security dimensions. Delivered as virtual appliance software or Software as a Service (SaaS), AccelOps links the infrastructure directly to business and business services. This brings the management of the data center/IT as service to the forefront and, in turn, enables the organization to better focus on quality, uptime and efficiency.

AccelOps puts the “who, what, where, when, why and how” at the operator’s fingertips to monitor and enhance service levels, better optimize resources and further reduce business risk. AccelOps combines discovery, data aggregation, correlation, out-of-the-box analytics, data management and reporting to yield a single pane of glass into data center and IT operations and services. Integrated functionality includes the following:

- Business service management and service mapping
- Performance management / network behavior analysis
- Availability management / service level agreement
- Security information event management
- Change control / automated CMDB
- Event / log consolidation with cross-correlation
- Identity, access and location management with directory service integration
- Network visualization and enterprise search
- Compliance and governance automation

## Why Disparate IT Management Tools Do Not Suffice

To fully understand the necessity of holistically managing the data center and IT, consider the following scenario: A remote branch office worker reports a slow application. Is the application really overloading the host, or is the database server not responding fast enough? Is there another application on the same server that is competing for resources? Are the networks in between OK? Is the storage network between the database server and the storage OK? Are the supporting network infrastructure services such as DNS and the domain controllers responsive? Did someone recently make a change to network de-

vices, or the applications or databases? If so, did the change occur from a known admin account and workstation? Is the virtualization server in the process of moving the virtual host containing the application or the database server from one physical machine to another? Are there known unpatched security vulnerabilities on the server? If the problem is caused by a security vulnerability, how was it exploited, who is the attacker, and who else was affected? Are any workstations showing abnormal traffic flow?

In many cases, the problem is indeed one of the above. Sometimes, however, another user is downloading a large file or watching streaming media that is clogging up a shared router interface, and the problem automatically goes away when the other user is done.

The question is, how quickly can problems be pinpointed, prioritized and resolved to maintain service levels with the best use of IT staff and technology resources?

Disparate IT management tools cannot correlate the data effectively or fast enough. The real problem of inferring the true root cause is often left to the user. Even after the root cause is identified, getting to the true identity and current location of the offending user or host is another matter, as this information is spread across different management domains such as OS logs, router configurations, VPN logs, etc. This lack of automation and real-time visibility affects the organization’s capacity to keep an IT infrastructure healthy, with minimal service level disruption and degradation.

## The AccelOps Approach

AccelOps delivers a seamlessly integrated, unified and service-oriented platform for the collection, monitoring, precise drill-down, root-cause analysis and detailed reporting on all IT events/logs and performance metrics that cuts through networks, systems, applications, vendors and technology boundaries. It provides data centers and IT organizations the full context (who, what, where, when, why and how) at their fingertips at any given time, and the necessary confidence and control in service delivery.

**CONTINUED ON PAGE 6**

## Service Level Matters

### SLA Definitions and Solutions

A service-level agreement (SLA) serves as the foundation for the level of service expected by a customer from a supplier or for service-driven organizations among business departments and IT. SLAs document the service, capabilities and reliability, as well as requirements, performance measurement, remedies and penalties. SLAs should be designed to minimize or eliminate misinterpretation.

Service requisites should specify what services are provided, availability details, the duties of each party, simple metrics, reporting processes, escalation and remedy procedures, dispute resolution, and cost/service tradeoffs. SLAs should be living documents with mechanisms in place for periodic review and updating.

Learn more about SLAs

[http://www.cio.com/article/128900/SLA\\_Definitions\\_and\\_Solutions](http://www.cio.com/article/128900/SLA_Definitions_and_Solutions)

### The IT Management Maturity Curve

IT service management aligns information technology processes, controls and priorities to meet business demands while offering the promise of reducing risks of service disruptions, realizing greater cost savings and enabling more assured service expansion. The concept of IT being run as a service, as opposed to functional infrastructure and application silos, has gained significant adoption by many organizations. Leading IT standards such as ITIL, ISO and COBIT all support the tenants of IT service management to better integrate IT according to business objectives.

CIOs, IT executives and data center directors seek to implement IT service management best practices to improve service responsiveness and drive down operational costs. Where your organization is positioned on the IT management maturity curve regarding activities and capabilities can provide some insight as to where to invest in respective processes and supporting management tools that will progress service reliability, delivery and enhancement.

Take a moment to assess your IT management maturity stage

<http://www.accelops.net/resources.php>

### No Virtualization Skills? Better Get Started

Virtualization skills are hot and in demand. While virtualization know-how will eventually become part of the standard skill set for system administrators, today's IT managers must dedicate resources to virtualization exclusively. To avoid losing virtualization experts to other employers, companies should strike a balance between dedicated staff and domain expertise. Cross-team working groups, for example, can help companies leverage skill sets and optimize virtualization investments.

Learn more about how virtualization should shape your hiring practices

[http://www.cio.com/article/495322/No\\_Virtualization\\_Skills\\_Better\\_Get\\_Started?page=1&taxonomyId=1448](http://www.cio.com/article/495322/No_Virtualization_Skills_Better_Get_Started?page=1&taxonomyId=1448)

## Virtualization and Consolidation

### Virtualization 101

Virtualization technologies provide a layer of abstraction between hardware, devices, systems and the software running on them. The three basic categories of virtualization — storage, network and server — are the most common applications of the technology today. Virtualization offers a logical view of computing resources rather than a conventional physical view.

Virtualization helps IT departments do more with less by collecting disparate computing resources into shareable resources. This is presented in pools of storage, manageable network bandwidth, and the allocation of server operating systems, processors and memory. This results in a reduction in hardware, energy to cool that hardware and, potentially, personnel to manage it. However, virtualization can present challenges such as performance conflicts and management deficiencies. Organizations need to understand how the technology changes the way a data center is managed, administered and operated.

Learn more about virtualization, from benefits to implementation challenges

[http://www.cio.com/article/40701/ABC\\_An\\_Introduction\\_to\\_Virtualization](http://www.cio.com/article/40701/ABC_An_Introduction_to_Virtualization)

### Virtual Certainties

The benefits of virtualization are well known in terms of economics, consolidating resources, infrastructure simplification and green IT — but it is not a panacea. Organizations must consider the impact virtualization will have on system administration costs and whether the technology is likely to increase complexity rather than reduce it. For example, server virtualization has operational benefits, as well as risks. As with any technology, virtualization is only as good as the planning and management that organizations put behind it.

Get a more holistic view of virtualization technologies

<http://www.theinfoboom.com/pov/editor/virtual-certainties>

## Best Practices

### How to Prioritize IT Spending During an Economic Recession

Reduced spending requires an examination of IT priorities – taking stock of what one has and assessing choices. At the top of the list for cost savings is consolidation across and within data centers, beginning with server and storage virtualization. This generally means reducing the number of parts and redundancies by assessing the following:

- Number of vendors / suppliers (economies)
- Number of applications needed (license reduction)
- Renegotiation of vendor contracts (cost reduction)
- The age of the equipment and associated cost of maintenance (replacement options)
- Data management (data stores, de-duplication and analysis)
- Processes (operational efficiency and effectiveness)

Additional downturn spending considerations should take into account portfolio management, capacity planning and infrastructure management, as well as security. Portfolio management serves to optimize expenditures by rationalizing the value and feature enhancement requests among enterprise applications. IT should also consider tools for more intelligently managing data, investigate cloud computing and consider SaaS applications for capabilities that are less expensive to outsource. Well-designed identity management and security controls can also help reduce potential risks due to employee turnover and use of outsourced services.

By continuing to invest wisely during a downturn, organizations can strengthen their long-term future and reduce costs.

#### Get more tips for IT cost-cutting

[http://www.cio.com/article/464725/How\\_to\\_Prioritize\\_IT\\_Spending\\_During\\_anEconomic\\_Recession?page=1&taxonomyId=1448](http://www.cio.com/article/464725/How_to_Prioritize_IT_Spending_During_anEconomic_Recession?page=1&taxonomyId=1448)

### Data Center Optimization: The Value of Business Service Management

Organizations seek to better optimize the data center and reduce costs by assessing applications, platforms, capacity and operations. It is important to consider the value of the business services supported by a given application and, as such, the business value behind your technology. Two factors determine the business value of a resource: knowing which business services and respective processes a resource supports, and understanding the business criticality of those services as measured by the impact of performance degradation or temporary loss of those services.

Business service management (BSM) solutions facilitate the transition from a technically-oriented, platform-based and silo management approach to a horizontal, business-oriented approach. BSM solutions offer a holistic view of the IT infra-

structure, and the relationships among IT resources and business services. As an IT management offering, they provide a number of features and benefits:

- Infrastructure management and instrumentation
- Monitoring, alerting, event management and capacity planning
- Improved service quality by implementing best practices and preempting issues
- Faster problem resolution in terms of identifying resources and determining diagnosis (root cause)
- Enhanced compliance by automating best-practice processes that support regulatory and industry mandates

#### Learn about business service management benefits

[http://www.cio.com/article/203700/Data\\_Center\\_Optimization\\_The\\_Value\\_of\\_Business\\_Service\\_Management?page=1&taxonomyId=1448](http://www.cio.com/article/203700/Data_Center_Optimization_The_Value_of_Business_Service_Management?page=1&taxonomyId=1448)

### Network Management: Tips for Managing Costs

Steady infrastructure cost growth, beyond power and storage, is usually due to expanded network demands resulting from physical expansion or increased connectivity. Network management becomes more complex as network expansion — such as an increase in the number of sites, users, devices, applications or services — and respective costs grow.

In order to control costs and maintain reliability, one needs to know how efficiently the network is performing and the location of network performance bottlenecks. One example is trending bandwidth consumption per application, server, network location, user/group, time of day, etc.

Once this is determined, there are many technologies that can be applied to reduce costs, prevent additional growth or reduce potential problems. Two such methods are network monitoring and virtualization. Network monitoring tools across wired, wireless and other connectivity services, such as VPN and VoIP, can help manage bandwidth consumption and reduce performance bottlenecks. Network consolidation via virtualization can improve network utilization, efficiency and agility by reconfiguring the network infrastructure to deliver services from a pool of shared network, server and storage resources.

The ultimate objective in network management and cost control is to understand and reach more predictable demand patterns to permit better utilization while spreading overhead costs over more productive assets.

Get more tips for cutting network costs

[http://www.cio.com/article/445863/Network\\_Management\\_Tips\\_for\\_Managing\\_Costs](http://www.cio.com/article/445863/Network_Management_Tips_for_Managing_Costs)

## How to Build a Hybrid Cloud Computing Strategy

Cloud infrastructures hold the promise of server virtualization, application deployment and as-needed scale, but not every application is a good fit. Each of the three cloud computing deployment options has different characteristics that should be considered:

- **Public clouds** – best economies of scale, but with a shared infrastructure model with limited configuration, security and service level specifications
- **Internal clouds** – operate within your data center, providing added security but modest economies of scale
- **Hosted clouds** – operate on service provider premises and resources that are segregated from others, but implement enterprise capabilities that are managed as a pool

Enterprises should consider a strategy that leverages all three options via virtual private cloud technologies, resulting in a hybrid cloud strategy. Virtual private cloud is a technique to extend trust boundaries across resources regardless of their deployment. Implemented with technology at the network security or application layers, it enables an enterprise to define and control addressing, topology, protocols and encrypted communications for instances deployed to cloud computing platforms.

### Beyond the technology, one should:

1. Examine the available portfolio of deployment options
2. Partner with enterprise architects to ascertain the best deployment per application
3. Determine the security model to be applied
4. Understand your hosting providers' current capabilities, redundancy and future plans

The net result will provide a hybrid cloud strategy that optimizes business service deployment efficiencies, as well as matches business application needs with infrastructure and security management requisites.

Read more advice on cloud computing integration

[http://www.cio.com/article/493492/How\\_to\\_Build\\_a\\_Hybrid\\_Cloud\\_Computing\\_Strategy?taxonomyId=1448](http://www.cio.com/article/493492/How_to_Build_a_Hybrid_Cloud_Computing_Strategy?taxonomyId=1448)

## Busting the Nine Myths of Cloud Computing

Before you jump on the cloud computing bandwagon, understand the truth behind these nine myths to determine what's best for your company:

**Myth No. 1: There's one single "cloud."** No, there are more: "infrastructure as a service," Web services providers and Software-as-a-Service applications.

**Myth No. 2: All you need is your credit card.** Not so fast: Infrastructure-as-a-service players might not meet all of your needs.

**Myth No. 3: The cloud reduces your workload.**

But you really need to know which model of cloud computing is right for you.

**Myth No. 4: You can seamlessly blend your private "cloud" (your virtualized data center) with public cloud providers.** This depends on the application and requirements.

**Myth No. 5: You won't ever be able to seamlessly blend your public and private clouds.** This is relative to how standardized are your configurations, data models and deployment policies.

**Myth No. 6: Cloud computing always saves you money.** This again depends on the applications.

**Myth No. 7: A cloud provider can guarantee security.** Beyond security certifications and provisions, there is no absolute guarantee.

**Myth No. 8: If you're running VMs, you're doing cloud computing.** While virtualization is one element, other items include scalability, pricing and provisioning.

**Myth No. 9: Cloud computing is about technology.** It is also about manageability.

Read all the cloud computing myth details

[http://www.cio.com/article/495523/Busting\\_the\\_Nine\\_Myths\\_of\\_Cloud\\_Computing?taxonomyId=1448](http://www.cio.com/article/495523/Busting_the_Nine_Myths_of_Cloud_Computing?taxonomyId=1448)

## Is the Cloud Reliable Enough for Your Business?

Cloud-based services offer pay-as-you-go processing power and storage space that don't require an investment in IT infrastructure. But as dependency on cloud computing grows, so too do concerns about its reliability and providers' willingness to accept responsibility for outages. Before signing a contract, companies should consider a provider's attitude toward customer service, the provider's physical facilities, how quickly the provider is growing, the possibility of service interruptions and the outage response plan.

Learn more about cloud computing's benefits and top challenges

[http://www.cio.com/article/493957/Is\\_the\\_Cloud\\_Reliable\\_Enough\\_for\\_Your\\_Business](http://www.cio.com/article/493957/Is_the_Cloud_Reliable_Enough_for_Your_Business)

## CONTINUED FROM PAGE 2

Building the full context requires an understanding of the infrastructure components, their relationships, and the meaning of current events to the infrastructure components by analytics and correlation, and being able to align the meaning and impact of current events to higher-level business services and applications.

### **CMDB Automation for Instant Success in Change Management**

Mapping the infrastructure landscape and relationship in CMDB is a prerequisite for any data center and IT management solution. AccelOps completely automates the CMDB building process via a bottom-up approach:

- Automatic discovery of networks, servers, applications and users
- Automatic categorization into specific functional device groups such as firewalls, storage, virtualized servers, databases and user groups such as administrators and regular users
- Automatic identification and maintenance of component relationships: Layer 2 and Layer 3 topology maps, virtual to physical host mappings, wireless AP to controller and n-tier application traffic flows, and applications to infrastructure mappings
- Automatic identity and location mappings: Network identities such as workstation IPs and MAC addresses are continuously mapped to user identities such as domain/server/VPN accounts and corresponding locations such as wired switch ports, VLAN IDs, wireless access points and VPN gateways.
- Automatic configuration and software details mappings: Network device and server configurations, and software details are captured and versioned to detect changes.

The bottom-up approach in CMDB automation gives the data center and IT organization a pragmatic way to quickly realize the benefits of change management while removing the burden of data collection across organizational barriers.

### **Innovations in Analytics and Correlation for Proactive Management and Efficient Root-cause Identification**

Without correlation and analytics capabilities, a CMDB would not be complete for any data center and IT management solution. The rich infrastructure relationship information in a CMDB needs to be correlated with current events and performance metrics to provide proactive measures for identifying exceptions, vulnerabilities and problems ahead of time, and to accurately pinpoint root causes to minimize service disruption.

This is accomplished by the AccelOps' powerful analytics and correlation engine, which is powered by three major innovations: 1) XML-based language for parsing data, 2) XML-based search and rule language for mining the parsed data, and 3) a profile and anomaly detection engine that can detect anomalies on any problem dimension.

The languages are versatile enough for dealing with a wide range of IT operational data such as events/logs, network flows and performance metrics from networks, servers and applications. Being XML based, the language enables users to rapidly add support for custom applications and share with the community. The XML files are compiled at runtime to give the same level of performance as handwritten code. The search-and-rule language supports a diverse range of analytics, from simple searching for textual patterns in the raw data to complex rules that trigger when abnormal event patterns are detected. Rule thresholds can be static or dynamic based on statistical profiles. SQL-like aggregation and sorting on more than 200 parsed attributes is supported.

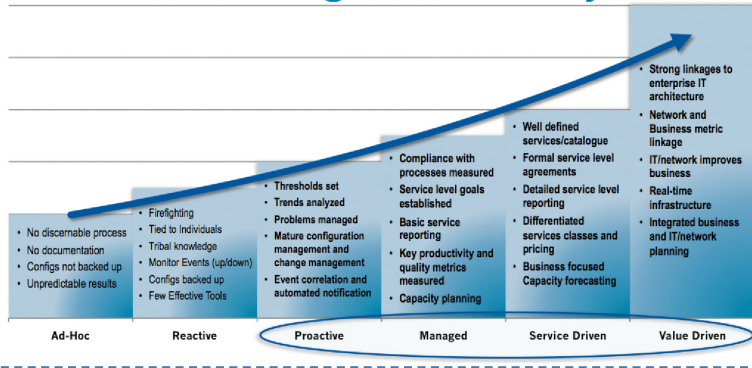
The solution ships with a bevy of built-in and customizable device support, and analytics for most top-tier vendors. Exposure to pre-defined analytics and an intuitive graphical interface to write searches and rules ensures a nominal learning curve. Unified treatment of all data along with the rich contextual metadata from discovery allow the user to search and write accurate problem detection rules that span performance, availability, security and change aspects. Scenarios include zero-day malware infections from unpatched machines, suspicious database logons, unusual geographical sources of Web server traffic, slow network scans and a sudden increase/decrease of application traffic.

### **Service Discovery and Impact Analysis to Align IT with Business**

Rather than only monitor the health and security of the data center and IT on a component-by-component basis, AccelOps allows data center and IT organizations to truly manage them from a service perspective. This leads to the ultimate goal of maintaining and improving IT service delivery.

AccelOps defines a business service as a smart container of relevant devices and applications serving a business purpose. From that point on, all the monitoring and analysis can be presented from a business service perspective.

## IT Service Management Maturity Curve



It is possible to track service-level metrics, efficiently respond to incidents on a prioritized basis, record business impact, and provide business intelligence on IT best practices, compliance reporting and IT service improvement. What is also novel about AccelOps is how easily a business service can be defined and maintained. Because AccelOps automatically discovers the applications running on the servers, as well as the network connectivity and the traffic flow, the user can simply choose the applications and respective servers, and be intelligently guided to choose the rest of the components of the business service. This business service discovery and definition capability in AccelOps completely automates a process that would normally take many people and considerable effort to complete and maintain.

With the understanding of service, IT executives and staff members can answer questions such as:

- How can we gain insight into IT service achievement?
- How can we proactively manage our infrastructure, and more efficiently respond to incidents and threats from a service perspective?
- What are the vulnerabilities and risks in our infrastructure?
- Where can we make improvements?
- Are my technology investments yielding expected results?
- When and where can performance and availability problems and service interruptions be avoided, and which issues have greater service consequences?
- Which new technology, deployed application, patch or potential choke point is affecting uptime?
- What resources can be further optimized, either by consolidation or adding capacity?
- Where can we reduce capital expenditures, redeploy resources and improve efficiency?

These questions can be answered with more than 500 built-in reports and rules coupled with comprehensive analytics. Behavioral or statistic profiling rules and best practices reports can be tuned and applied to satisfy a variety of security, availability, performance and compliance monitoring, and reporting requirements, and to create compensating controls.

As a SaaS and virtual appliance offering, the AccelOps solution is built from the ground up for multi-tenancy support where different organizations can have their own customized view and higher-level management can have a cross-

departmental view. In addition, the unique virtual appliance-based, clustered, multi-tiered and hybrid storage architecture separates the storage from the computation, and separates the hardware from the software. This allows the user to:

- Choose the best-of-breed storage platform
- Keep migrating the software to cheaper, faster, newer hardware to improve performance without losing any data
- Take advantage of robust failover capabilities of virtualization management servers to gain higher availability for the AccelOps solution

The hybrid data management architecture comprises a proprietary “flat-file based” database for storing event data and an embedded, commercial-grade relational database for storing CMDB data. This approach allows for better compression and faster event handling (data insertion and query rates) that equates to greater scale, productivity, efficient data storage and a more engaging user experience.

AccelOps has a multi-tiered, clustered, scale-out architecture that can be run on multiple virtual machines to facilitate parallel computation. This allows the user to instantly increase performance by adding hardware without expensive data migration procedures.

Finally, the AccelOps’ user interface is built on the Adobe Flex RIA framework, which allows for a more engaging desktop application experience, yet runs from a browser offering anywhere, anytime accessibility.

AccelOps brings to market a uniquely integrated IT service management solution that allows IT to see the trees as well as the forest – harnessing the value from an organization’s existing operational data. Yet it provides a cost-effective, flexible and scalable IT service management solution packaged for mid-tier enterprises. Given the solution’s functional depth and breadth, the holistic approach allows organizations to be more efficient, enhances service reliability, and makes service management practical and tangible.

**Learn how AccelOps helps IT accelerate business**  
[www.accelops.net](http://www.accelops.net)