Network Management Megatrends

While many in the IT sector might consider enterprise-class network management to be a mature and stable science, with little to improve or change, recent tectonic shifts in IT technologies and architectures, including cloud and server virtualization in particular, are combining to force a re-assessment of that position. These shifts bring with them new demand and expectations for network capacity, performance, and resilience, and once again are returning the network to a position of essential enabling prominence in IT strategy. Behind all of this change can be seen a subtle yet unmistakable trend of growing operational convergence and consolidation, with networking pros and network management systems seated in the front row and frequently leading the charge.

In February 2012, ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) analysts published a landmark study of the drivers, issues, and priorities for network managers and network management tools, technologies, and practices, entitled Network Management 2012: Megatrends in Technology, Organization, and Process. This paper recaps several of the major findings of the report and includes a related case study where network management tools deployed include IT Operations Intelligence (ITOI) from EMC.

Study Context – Business, Organizational, and Technical Drivers

The research started by assessing major “environmental” factors affecting priorities for monitoring and managing networks and networked application performance. In terms of overall business drivers, the steady focus, year upon year, has been on four key areas, in the order listed below:

- **Cost:** In particular, initiatives to cut costs and deliver operations savings.
- **Compliance:** While everyone agreed that compliance is next most important, executives are particularly sensitive to this issue.
- **Consolidation:** Sustained pressures to consolidate and reduce the organization.
- **Collaboration:** In particular, needs to improve/expand global communications and collaboration.

Top networking initiative influencers were networking security, network performance optimization, and virtual network elements within virtual servers. Top broad IT initiative influencers were server virtualization, virtual/hosted desktop, and data center consolidation.

**Megatrend: Cross-Domain Triage Teams & Process Maturing**

EMA research indicates that cross-domain triage teams have become increasingly formalized, mature, and entrenched as a part of how organizations deal with increasingly complex delivery architectures. Over 80% of respondents indicated regularly using such team approaches to tackle problems regarding networked application performance issues, and 66% of that group indicated that the network operations team initiates and/or leads such teams most or all of the time. Further, compared to responses on the same question asked in the seminal EMA Megatrends study in 2008, those formally defining the processes and procedures used by these teams more than doubled, to 76% overall. These results are accentuated within organizations deploying server virtualization and adopting cloud services, where cross-domain triaging rose to 87% and networking acting as lead rose to 80%.
Megatrend: Virtualization
Virtual networking deployed as part of server virtualization increasingly affects network managers, their tools, and their practices. Only 62% of respondents indicated that network engineers/operators have access to virtual network elements within virtual server environments for monitoring/troubleshooting visibility, and only 58% have access for configuration and control. As can be seen in Figure 1 below, the situation specific to visibility into these environments has improved incrementally from early 2011 to late 2011; however, 72% of respondents still reported needing better insights.

![Bar chart showing current status of network monitoring access into virtual server environments](image)

**Figure 1: Current status of network monitoring access into virtual server environments**

Megatrend: Cloud
The advent and availability of external cloud services for sourcing IT solutions is having a direct impact on network management, according to nearly half of research participants. Within that group, while 44% reported that when cloud issues arise, the network team gets called first, the news is not all about being reactive – 40% also indicated that the network team is involved in cloud services design and deployment. Perhaps most striking is that organizations embracing cloud are far more likely than their peers to see direct network management influences due to server virtualization, have networking teams leading cross-domain triage, and be using outsourced services for some or all of their network monitoring and management needs.

Resulting Requirements for Network Management
The changes coming from converging technologies, increased use of virtualization, greater network criticality, and the shift towards cross-domain operations are resulting in new priorities for network management tools, technologies and practices. Key among these new requirements is the clear desire for fully or tightly integrated tools over all other possible architectural choices. The demand for integration is even greater among those adopting cloud services, who were 46% more likely to prefer fully integrated solutions than those not embracing cloud, and four times less likely to prefer loosely integrated, best-of-breed approaches. Other important results revealed included business priorities for network management products, where the top three most commonly desired characteristics were low cost of maintenance, low
total cost of ownership, and flexible deployment options. Finally, top network automation priorities were identified as including root-cause analysis, configuration management, and predictive alerting (see Figure 2).

Which of the following types of network management automation are priorities within your organization? (Select all that apply)

- Root cause analysis: 54%
- Configuration backup: 44%
- Predictive alerting: 43%
- Corrective/recovery actions: 43%
- Configuration auditing: 36%
- Discovery – incremental: 31%
- Report generation: 30%
- Policy-based configuration management: 29%
- Discovery – initial: 24%
- Guided/expert analysis: 19%
- Other (Please specify): 1%

Figure 2: Network Management Automation Priorities

EMC Case Study: Large Enterprise Network MSP

EMA interviewed a Manager of Network Services within a global telecomm provider’s Managed Service Provider business unit located in continental Europe. The Service Manager’s team is responsible for providing customer services and technical support while bring new MSP customers on board and during introduction of new network technologies into existing client environments. While this is not a typical enterprise management environment, it is common that existing enterprise network management tools in use by management services clients are brought into the MSP setting when services are initiated. As a result, this team has experience with a broad range of network management tools and usage scenarios.

The Services Manager related a long list of tools in use, most of them in place due to contractual requirements with individual customers, but specifically called out EMC IT Operations Intelligence (ITOI) as the team’s mainstream monitoring and event management platform across multiple managed customers. The team is also using EMC’s Network Configuration Manager (NCM). The MSP has standardized on these products specifically because of the advanced root cause analysis capabilities within ITOI and the multi-vendor change and configuration management features within NCM that were a complement to their use of CiscoWorks for Cisco device configuration management.

Key drivers and influences affecting network management priorities and choices from a business perspective include mergers and acquisitions, compliance initiatives, global collaboration and, (not surprisingly) outsourcing. Networking influences were many, including server virtualization, network performance optimization, network upgrades to 10G, and WLAN/mobile device support. The Service Manager’s team is also dealing with IPv6 transitions, where some customers are in progress of upgrading, though most are still in the planning stages.
One major driver/change with significant impact, starting last year and looking ahead into 2012, is the move towards public/hybrid cloud. This organization defines this as the introduction of and conversion to virtualized computing and the consequent pooling of resources that happen within the datacenter. The biggest challenge is dealing with new virtual network technology elements and connecting together an integrated understanding of state, availability, and performance across mixed physical/virtual infrastructure. From this perspective, the manager believes that their NCCM approach is in pretty good shape, but a significant challenge remains in integrating event management and implementing correlation such as that offered with the combination of EMC ITOI and EMC NCM.

**About EMC**

EMC Corporation is a global leader in enabling businesses and service providers to transform their operations and deliver IT as a service. Fundamental to this transformation is cloud computing. Through innovative products and services, EMC accelerates the journey to cloud computing, helping IT departments to store, manage, protect and analyze their most valuable asset — information — in a more agile, trusted and cost-efficient way.

EMC's comprehensive physical and virtual infrastructure management portfolio includes IT infrastructure availability management via EMC IT Operations Intelligence, configuration management via EMC Network Configuration Manager, VCE Vblock infrastructure platform management via EMC Unified Infrastructure Manager (UIM), and, most recently, performance management for networks, applications, data centers, and cloud infrastructures via EMC Watch4net. In addition, this portfolio aligns closely with VMware for enhanced virtualization management, as well as with RSA for improved security management and IT compliance.

Together, these form the foundation of EMC’s solution for Service Assurance, which provides the virtual data center vision, configuration management, and ability to identify and act on problems that enable IT organizations to transform operations management, and ensure the availability and performance of business applications and services. Additional information on this solution can be found at [www.EMC.com/SA](http://www.EMC.com/SA).

**About EMA**

Founded in 1996, Enterprise Management Associates (EMA) is a leading industry analyst firm that provides deep insight across the full spectrum of IT and data management technologies. EMA analysts leverage a unique combination of practical experience, insight into industry best practices, and in-depth knowledge of current and planned vendor solutions to help its clients achieve their goals. Learn more about EMA research, analysis, and consulting services for enterprise line of business users, IT professionals and IT vendors at [www.enterprisemanagement.com](http://www.enterprisemanagement.com) or [blogs.enterprisemanagement.com](http://blogs.enterprisemanagement.com). You can also follow EMA on Twitter or Facebook.