



AN OSS OBSERVER WHITE PAPER COMMISSIONED BY IBM

By Patrick Kelly

Executive summary

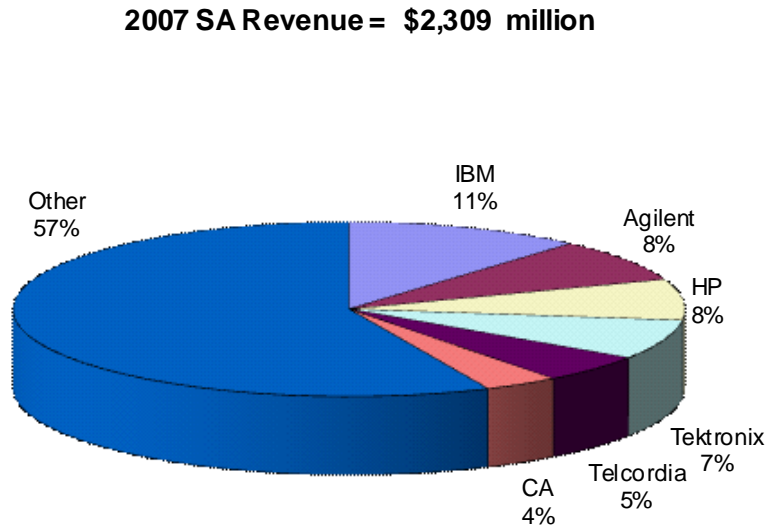
International Business Machines is the # 1 supplier of service assurance solutions to communication service providers. It has a leading position in both the fault and performance monitoring markets based on market share data OSS Observer published for year ending 2007. IBM's rise in our rankings was achieved as a result of acquiring Micromuse in early 2006 and Vallent in the first quarter of 2007. These acquisitions combined with the Tivoli assets help bolster the portfolio covering wireless, wireline, IP, and IT domains. IBM is using the pre-packaged applications of Netcool and Vallent in combination with other products in its portfolio to meet the demands from communication service providers including incumbent fixed line providers, cable operators, mobile providers, managed service providers and internet service providers to create, deliver, and assure the quality of next generation services.

This white paper examines the drivers for growth in the service assurance market, IBM's capabilities in helping CSPs transform their business and the trends influencing the next wave of managing the customer experience and the end to end service quality.

Market share

In 2007, IBM controlled 11% of the \$2.3 billion service assurance market (figure 1).

Figure 1: Global service assurance market share, 2007



Source: OSS Observer

Source: OSS Observer

We expect IBM's market share to increase as a result of direct selling in emerging markets and expanding its base in accounts it already controls. IBM has a strong network equipment channel partnership with Alcatel-Lucent, Cisco, Huawei, Motorola and Nortel. Further growth is projected from the IBM Global Services group, which is expanding its managed services business and acting as the prime integrator in major transformational projects with customers that include Sprint, Bharti, and KPN.

Although Netcool has a strong position in the communication software market, we think growth can accelerate in this part of the business because of increased demand by CSPs to model services and harvest data in the back office systems to reveal service impacts by customer. Mobile operators have been quite aggressive in awarding contracts to suppliers that can deliver key quality indicators that correlate network availability and

service performance with the corporate customer. This enables mobile operators to gain early warning alerts on major customers impacted by cell site congestion or poorly performing services for business applications.

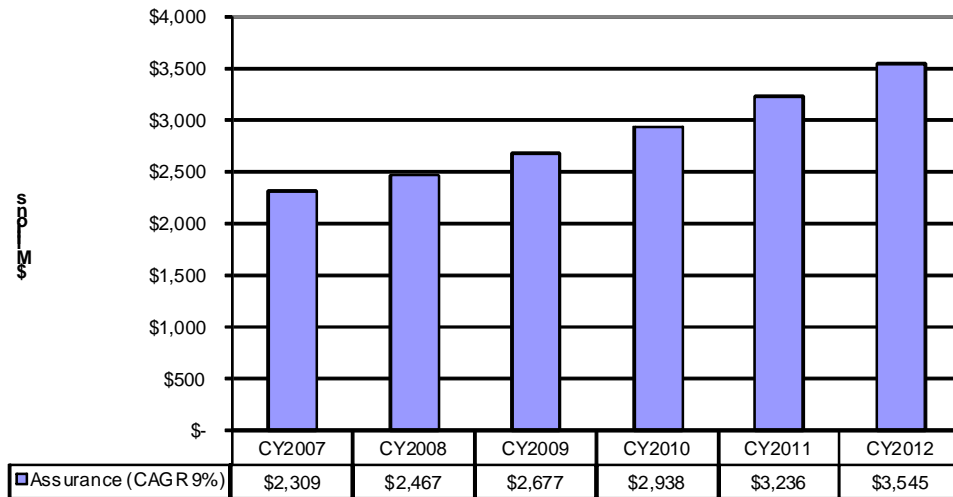
Another factor is the proliferation of service delivery platforms. The telecommunication services combined with IT application development will drive demand for a second wave of spending to manage availability and performance of the IMS control layer and application servers. Service delivery platforms enable communication services providers to efficiently create and deliver new innovative services using carrier-class IT platforms. Communication services provider spending on service delivery platforms will grow from \$1.78 billion in 2006 to \$5.04 billion in 2011 at a 23% CAGR. This phenomenal growth rate will be achieved because SDPs will become the core service platform in the CSP's infrastructure. SDPs will deliver a range of new and existing services that combine communications, entertainment and electronic commerce. Multimedia content, messaging, presence, location, games and real-time charging will be key enablers.

Factors impacting the future service assurance market

OSS Observer forecast that the global market for service assurance applications will increase from \$2.3 billion in 2007 to \$3.5 billion in 2012 (figure 2). Many factors are influencing investments and include a more competitive telecommunications market, improving quality of service, fixed and mobile convergence, emerging access technologies and services over IP such as 3G, LTE, WiMAX, VoIP and IPTV.

IBM's strengths are rooted in its ability to assist large companies to transform its IT organizations to compete effectively in a global market. This strategy will be important to CSPs as new services are deployed in the mobile and broadband segments.

Figure 2: Global service assurance forecast 2007 - 2012



Source: OSS Observer

Source: OSS Observer

Consumers' willingness to move from one operator to another is often measured on the availability of service, fast problem resolution, and the consumers' perception of the quality of service. As more competitors enter the market to offer new types of services, this will contribute to spending in the service assurance market to support new technologies and services and support overall business objectives to attract and retain existing customers. For established services that have reached high subscriber saturation rates or high coverage areas (homes passed), CSPs investment in assurance systems must not just evaluate the transport and access network but tune their operations to assess application performance and service quality. Intense competition in highly saturated markets will result in increased demand in service quality management software that measures the end user experience.

Consumers demand for personalized communication – including voice, email, music, and video creates a strong business case for offering new services over a common network. The convergence of the network will drive another wave of service assurance investments.

The demand for service quality is increasingly important for the Enterprise purchasing critical communications from the service providers. Enterprises rely on the service providers to conduct business and so any impairment of the service delivered can

have a significant impact in perception and potentially in revenue terms.

A strong indicator to future service assurance spending is new network technology deployments such as fiber to the premise and longer term, WiMAX. Overlay technologies to bring higher bandwidth access and session control require new sources of data to isolate faults and measure available capacity. In the mobile segment, the focus is on moving to third generation networks and beyond. At this point in the investment cycle, fault systems are gaining a disproportionate share of the spending. In the next two years the market will see a shift towards media and entertainment services that promise to disrupt existing distribution channels for DVDs, music, games, and Hollywood content. IPTV deployments are largely in the trial phase with fewer than five million global IPTV subscribers in service as of June 2007. The overall adoption rate is expected to exceed high speed data growth rates seen earlier this decade.

In the mobile market, services such as push-to-talk over cellular and video sharing will drive new service growth. The subscriber base of mobile compared to broadband is at least 10 times larger in many regions so penetration rates of a few percent points will move the revenue needle.

New services bring new protocols and increasing service lifecycle complexity. These services are often dependent on technology and application sessions that span many domains within the CSP network and in some cases outside the network infrastructure. This leads to increased emphasis on the integration of the components managing these disparate domains to enable full End to End visibility of each next generation service. Furthermore, this generates demand for active testing to sample service performance beyond the boundaries of the facility based provider and passive testing to capture traffic profiles and analyze the content being delivered. All key systems must be capable of exchanging network and infrastructure events to gain a holistic view of the service.

How is IBM positioned to meet demands of CSPs?

Service providers have traditionally seen Netcool as a 'manager of managers' in that it takes events and alarms from different management subsystems, processes the data, and presents information in a consolidated view for the operator. Netcool supports more than 300 software probes that collect events

from a wide variety of network and element management systems. When the Tivoli Netcool event system is integrated with the network discovery and dependency mapping capability of IBM Tivoli's Network Manager, the customer can take advantage of the root cause analysis functionality.

IBM's position in the performance monitoring market is a result of combined contributions from Prospect, NPR, Metrica Performance Manager (MPM), Proviso, Tivoli Monitoring and Tivoli Composite Application monitors. The Vallent assets (Prospect, NPR and MPM) and customer base put IBM in a stronger position to expand its footprint in the mobile market. In the Wireline/IP market the Proviso product acquired with the Micromuse business has been deployed in over 60 customers.

IBM's service management strategy is to provide best-of-breed comprehensive solutions across operations and IT, and other lines of business (customer care, sales, etc) to enable carriers to speed time to market, ensure quality of service and improve the operational efficiency of CSPs. IBM leverages the Tivoli Netcool product suite as the cornerstone of its offering bringing real time service management together with service quality and customer experience management in a single modular solution set. To maximize the ROI to customers Tivoli is rolling out a single common visualization platform into these Service Management modules and across the broader Tivoli Netcool assurance suite. This key integration initiative is not only designed to reduce training and operating times for staff moving between functional domains but it aims to provide valuable capabilities such as "Launch in Context" to leverage the true value of an integrated portfolio.

Further Tivoli Netcool integration value is being driven through the standardization of the reporting front end systems as the Wireless, Wireline/IP and IT/Data Center solutions converge towards a single user interface.

IBM brings together the point product software, services, and the middleware software components needed to integrate the legacy systems with service oriented software needed to support the next generation of services.

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