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Network Performance Management Solutions Can Provide a Competitive Edge

By Vikas Trehan

Today's highly competitive telecommunications environment allows for very few errors. In most markets, consumers and businesses can choose from multiple service providers and can compare the quality of service (QoS) each offers. Additionally, the rapid technological development of a wide variety of applications over recent years translates into "something for everyone." The widespread business and consumer acceptance of services like VoIP, BlackBerry®, and Mobile TV means that many people carry their homes and offices in their pockets and briefcases utilizing a broad range of applications. Increasingly they require the ability to transmit voice, text data, and even videos on these devices at any time and from any place, and without any service degradation or interruptions. And, as these devices proliferate and service levels generally improve, consumer expectations rise, raising the bar for more complex QoS. Network performance management is no longer a convenience, but has become a necessary tool to keep pace with market demand to attract new customers as well as to retain existing ones.

The Quest to Reduce CAPEX and OPEX

Consider the fast pace of an application "life cycle." Many end users pride themselves on their early adoption of the latest technologies, and service providers are eager to accommodate them. Yet this is often easier said than done. Different applications have different requirements and are becoming increasingly complex and sophisticated. For example, data is elastic and can bounce back from network delays and congestion, whereas mobile voice and video applications are rigid and suffer quality degradation if information packets are delayed or lost.

As new applications are added, effective network performance management solutions can support establishing a baseline for network utilization. This includes identifying which applications are currently running (perhaps even unauthorized applications), as well as indicating routine and predictable usage trends per consumer or business group. Such accurate, real time network assessment capabilities provide a high level of visibility for applications and network performance, paving the way for a sound CAPEX strategy by allowing for effective capacity planning and the quick and successful ramp-up of new applications.

Without this, network operators have no other way of "seeing" network traffic in order to prepare for it and to respond to it appropriately.

Robust network performance management tools can help reduce OPEX with real time tracking that alerts operators to service degradations like latency, jitter, or packet loss. Any problems that might arise are instantly visible to operators, who literally can see where and when something is going wrong on the network and correct it before it affects the quality of the user experience or the performance of other applications. Network operators can then quickly troubleshoot the underlying network to figure out exactly what's happening and find the source of the problem. Additionally, operators can prioritize applications to ensure a QoS that complies with enterprise guidelines, service level agreements (SLAs), and user expectations.

Keeping an Eye on the Enterprise

More and more, businesses of all types and sizes are expressing interest in real time, historic, and forecast reporting capabilities that best-of-breed performance management tools can provide. As the businesses consolidate data centers, they demand the same visibility at the application level. Mobile service providers achieve significant revenues from partnerships and wholesale subscriptions. Industry analysts report that mobile operators are seeing stellar growth in revenues coming from data services. For example, in 2007, Vodafone Group's revenues from data services (excluding messaging) grew by 51.6%, Rogers' (Canada) grew 49%, and Bell Canada's grew 45%. As such, it is critical to offer customer reporting to corporations that purchase enterprise data services (private APNs). They want to see the numbers that will back up a service provider's claims. Every operator has to be able to customize his or her reporting based on the service definition, which, in turn, dictates the collection and aggregation of data. To be effective, a performance management system needs the flexibility to accommodate this type of operator customization along with new and/or changing applications.

From Metrics to Management

Effectively maintaining the performance of these new converged services requires the development of a proactive network management strategy that supports minimizing service degradations rather than responding to them after the fact. When deciding on a more robust performance management system, here are some key requirements to ensure a proactive strategy:

·**Tiered architecture and carrier-class scalability**
Providing a focus on centralized inventory with automated discovery and data model provisioning, tiered architecture can offer automated and dynamic relationship maintenance for devices, services, KPIs, reports, and attributes. In addition, carrier-class scalability, which utilizes distributed collection, can result in a balanced, multi-tier processing architecture that is robust and highly available.

·**Real-time analysis**
A key attribute to successful network performance management is the analysis of data at the point of collection, including real-time performance metric computation and on-demand reporting. The comparison of real-time performance with historical baselines will help detect existing abnormal conditions. Preemptive, real-time alerting that identifies service level problems and impending performance degradations in advance of outages is also key.

·**Open interoperability**
The ability to have diverse systems working together through an industry standard database will allow for the successful bidirectional transfer of valuable business, performance, topology, and configuration data as well as the integration of existing EMS and OSS solutions. The performance management product should allow the integration with customer portals to provide a single view of the service including billing, trouble tickets, and performance SLAs.

·**Object-based modeling**
The aggregation of associated KPIs at multiple levels, from resource to service to customer, can help provide summarized information for various user communities inside an operator. Embedded workflows for specific tasks (service level management, capacity planning, problem resolution) while providing simplified customization (changes to pre-packaged analytics and the creation of new performance reports) are also important to focus on.

·**Flexible and adaptive**
The flexibility to rapidly utilize new and existing resources in multi-vendor, multi-technology environments is significant in the successful implementation of network performance management along with having customization of portal-based dashboards and reports. Another consideration in the ever-changing business world is the possibility of merger and acquisition activity. This can include expansion across local, state, or national borders, where governmental regulations and usage trends may vary. This type of change makes it imperative that a network performance solution is highly scalable to accommodate this kind of growth, as well as providing a broad enough platform to function seamlessly with a variety of

vendor technologies and legacy systems.

Meeting the Challenge of Performance Management

In terms of cost and ROI, performance management solutions give operators the environment they need to work productively to ensure the optimal utilization of applications, as well as supporting a high QoS standard. Individuals and enterprises will buy and use what works for them, and what works well. Performance management can not only improve existing network operations, but also help avoid significant service degradation or loss of service before they occur. Establishing a strong track record for uptime and service quality is certainly the most effective way to generate customer loyalty and attract new users. No amount of clever advertising can replace a commitment to providing a high QoS.

Conversely, think for a moment of the real as well as the intangible costs attached to poor service quality or even network failure. Without sound, reliable performance, management operators can spend hours trying to track the source of the difficulty, creating the domino effect of delaying or even stopping other critical applications. In our current high-tech cultural environment, "the network is down" are four words that have come to wreak havoc in our personal and professional lives, signaling the disruption and inconvenience of indefinite delays and wasted time, missed deadlines, and miscommunications. A negative user experience can discourage customers from adopting new—even potentially useful and cost-saving—applications, or it can drive them to other service providers. Network delays and failures can't be hidden from users and in many cases, will not be forgiven easily.

From QoS to Committed QoS

Service providers' networks are being asked to do more today than ever before. Independent market research shows that in 2007 alone, mobile data traffic ramped up between four and eightfold. In all probability, these demands will only increase over coming years. As developers find more ways to move applications onto telecommunications networks, both the applications and the network become more complex and sensitive to service disruptions. Additionally, with this growth in utilization comes a greater consumer and enterprise reliance on the network to accomplish not only novel and non-essential tasks, like gaming, but critical functions, like recording sales transactions. Given that the technology and services offered to consumers are changing so quickly, users don't want to be held hostage by vendors. With multiple service providers in the marketplace, they can simply go somewhere else to have their needs met.

Best-of-breed performance management solutions give operators the tools they need to ensure that the network adapts quickly to the rapidly changing service provider landscape and supports the QoS that both consumers and business users have come to demand.

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