Pipeline
Your OSS/BSS Information Source.
www.pipelinepub.com Volume 6, Issue 12

Meeting the Rising Customer Expectations of Mobile IP Services -

Integration of OSS and Network Monitoring a MUST

By ***Michele Campriani*** and ***Scott Lukes***
of Accanto Systems

The mobile consumer has finally won. In almost every country, mobile subscribers are flocking to the new generation of rich-content mobile data-based services such as Flickr, Twitter, real-time gaming and location-aware applications that are -truly- making a difference in everyday life. To launch these services, however, operators are being forced to massively upgrade their networks to all-over-IP architectures in order to provision and mange them. Unfortunately, this migration to all-IP has presented huge problems for operators, as the monitoring and troubleshooting competencies, equipment requirements, and most importantly, linkages between the Network Operations Center (NOC) and Customer Care (CC) have changed dramatically.

Operators now understand that the metrics that define a good customer experience for voice do not necessarily have meaning for IP-based services. One of the reasons is that in the IP-based world, there has been a natural decoupling between the service delivered and the network infrastructure. For instance, every core network node may be operating fine, but if the services or access elements have issues such as abnormally high TCP retransmission rates, DNS resolution anomalies or HTTP failures, the customer will have a negative experience. Also, because of this relationship between the service and network, it is especially important that the NOC and CC

Not for distribution or reproduction.

© 2010, All information contained herein is the sole property of Pipeline Publishing, LLC. Pipeline Publishing LLC reserves all rights and privileges regarding the use of this information. Any unauthorized use, such as distributing, copying, modifying, or reprinting, is not permitted. This document is not intended for reproduction or distribution outside of www.pipelinepub.com. To obtain permission to reproduce or distribute this document contact sales@pipelinepub.com for information about Reprint Services.

become more tightly coupled. When a customer calls with a support issue, it is important that it be resolved at the CC-level before it becomes a NOC issue, as trouble tickets must now be solved in hours, not days or weeks. Aligning CC and the NOC requires careful integration of the OSS and Network Monitoring.

Until now, the roles of the OSS and Network Monitoring Systems (NMS's) in an operator network have been isolated activities, often conducted by independent departments. The OSS has always been concerned with obtaining information from the nodes and providing network-level information, while the NMS is concerned with extracting information from network traffic and from the services themselves. The problem for the OSS is that it must now map network elements to services, which it was not designed to do. The problem for the NMS is that it was designed to look at services and evaluate their quality, but it does not communicate with the network elements. As an example, take a traditional "Fault Management" solution from an OSS vendor: the system is able to detect hardware problems affecting the network elements, but even if they detect that a particular node has a problem, they are not able to determine which service has been affected.

The metrics that define a good customer experience for voice do not necessarily have meaning for IP-based services.

It is interesting to note that most operators already possess both OSS and NMS systems, but because of organizational boundaries, the two systems do not interface. If nothing else, the overall migration to IP-based networks and data-oriented services is forcing operators to re-assess how their Back Office operations are structured to accommodate integrations such as these. Integration of the OSS and NMS not only allows mapping of the network elements into the services provided, but also provides information on the services and their quality…even if no faults were detected by

Not for distribution or reproduction.

© 2010, All information contained herein is the sole property of Pipeline Publishing, LLC. Pipeline Publishing LLC reserves all rights and privileges regarding the use of this information. Any unauthorized use, such as distributing, copying, modifying, or reprinting, is not permitted. This document is not intended for reproduction or distribution outside of www.pipelinepub.com. To obtain permission to reproduce or distribute this document contact sales@pipelinepub.com for information about Reprint Services.

the OSS. Most importantly, such an integration provides “Closed Loop Management”, where instead of having the OSS simply signaling the fault, since the two systems are now integrated, the operator can start troubleshooting from the point the fault is actually detected.

Having worked closely with operators in all stages of core IP migration and IP service introduction in order to make such NMS/OSS integrations possible, it’s clear to us that the full menu of considerations and issues in such a migration are beyond the scope of this article (and even an entire book). However, a few elements stand out as being very important for the operator to consider.

For any form of NMS/OSS integration to occur, it is important that inbound data received by the NMS system is diverse and carefully groomed. Modern probes must not only be able to aggregate traffic from the network, services, subscribers and devices, but they must be able to trap and analyze traffic at line-rates up to 10 Gbps in order to generate the appropriate real-time xDRs (call/etc. Detail Records) and elapsed-time inputs to the management system.

It is also important that the NMS be able to export detailed customer and service information for analysis and processing by external systems, such as Performance Management (PM), Service Quality Management (SQM) or OSS/BSS systems. This exporting typically happens through Key Performance indicators (KPIs) generated by the NMS. By providing accurate, fast and ‘meaningful’ KPI’s a more accurate picture of the end user experience can be constructed. The NMs should also have the ability to export to the OSS alerts and alarms based on certain types of transactions or by thresholding KPI values. This type of integration requires careful planning, design and implementation to ensure a high level of consistency when the NOC and Customer Care are interfacing on an issue. If done correctly, this provides a new and meaningful data source for the OSS, in that the notifications and alarms are now based on real customer experience as it pertains to accessibility, reliability and performance of the service –and- the network.

Most importantly, linking the NMS with the OSS (and other customer-facing tools such as CRM systems) finally allows the NOC and Customer Care to share data more effectively. The result should be reduced trouble ticket times, more issue resolution efficiency and an increase in issues that can be resolved in Tier 2 and 3 support in Customer Care, before they ever become NOC issues.

To be sure, for the dream of a fully converged telecom environment where IP and voice-based services share the same network infrastructure and quality levels to become a reality, there are many transitions that must occur, and many operational models that must migrate. A first step in any successful endeavor is closely aligning the operator’s network monitoring and OSS functions.

Linking the NMS with the OSS allows the NOC and Customer Care to share data more effectively.

Not for distribution or reproduction.

© 2010, All information contained herein is the sole property of Pipeline Publishing, LLC. Pipeline Publishing LLC reserves all rights and privileges regarding the use of this information. Any unauthorized use, such as distributing, copying, modifying, or reprinting, is not permitted. This document is not intended for reproduction or distribution outside of www.pipelinepub.com. To obtain permission to reproduce or distribute this document contact sales@pipelinepub.com for information about Reprint Services.