A large African mobile and fixed operator implements integrated Service Assurance to transform its NOC to an automated SOC

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Executive summary

A large African mobile and fixed operator had a need to consolidate alarm management and performance management silos in the NOC to support a higher level of service management and to reduce manual operations. Network alarms and performance correlation would enable them to improve the identification of the impact of a fault on the performance of a service and the reverse. For this, they needed to replace and consolidate multiple EMS (Element Management Systems) with a single-pane-of-glass integrated Service Assurance solution.

As part of the consolidation, they expected to reduce the overall system total cost of operation (TCO) while also introducing more automation. Through this, they would support monitoring the quality of its consumer fixed and mobile VAS, core, IPRAN, MPLS, transmission networks and Internet interface devices.

MYCOM OSI offered the mobile and fixed operator its integrated suite (EAA) comprising PM (Performance Management), FM (Fault Management) and SQM (Service Quality Management) applications, by upgrading and expanding the existing performance management deployment to the cloud native EAA integrated platform and adding integrated fault management and service quality management layers to offer the benefits of a fully integrated suite.

The addition of FM to PM resulted in a higher quality of SQM, since the correlations helped in ascertaining the root cause analysis for problems observed across various mobile and fixed services. The NOC operations were transformed to SOC operations as a result of the integrated suite of solutions and automation of the operations.
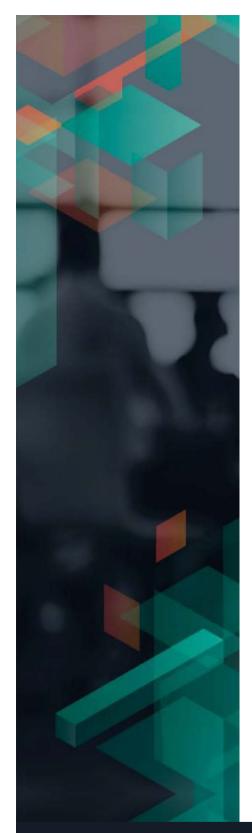
The challenge

The customer's challenge was that the EMS-based Fault Management system was built on data from disparate EMS systems, and the alarms (which were not reduced/filtered) from these multiple systems had to be visually correlated to determine the root cause of the issues. The alarm notifications did not have thresholding to limit them, which meant that the operator was processing a lot of irrelevant alarm data. Manual ticketing was carried out for all the alarms received, which resulted in inefficient alarm processing. For this reason, the full value of FM could not be correlated to the performance degradation of network/ services and vice versa. In addition, there was no SQM layer to monitor the quality of services offered.

The solution

MYCOM OSI's EAA integrated suite of applications was offered as an umbrella system to introduce the FM application to existing PM, and to build a robust SQM layer. For this, MYCOM OSI started by replacing multiple EMS-based FM systems by a single FM application. Significant alarm reduction was carried for multiple domains by introducing Alert Surveillance Solutions, which introduced inter- and intra-domain FM correlations. The FM and PM layers were then integrated through the EAA platform, enabled by UNIT (Unified Inventory and Topology). The SQM layer including the Service Quality and Impact Analyser Solutions was introduced on top of PM and FM data to model services, and to monitor different services by linking all the network domains (access, IP, core, transport, and Internet). The services covered fixed data, mobile data, and mobile voice services across 2G, 3G and 4G networks. In the SQM application, Service Health Index dashboards were created to provide a global service view.

Benefits to the large African mobile and fixed operator

- Reduced system TCO based on efficiently and tightly coupled fault and performance systems (via the integrated EAA suite)
- Single Pane of Glass covering multi-domains for multi-services (via the integrated EAA suite)
- Improved operational efficiency by reducing the number of non-impacting alarms for investigation (via the EAA-FM application)
- Improved service impact by identifying the issues that impact performance and resolving the root-cause faster (via the EAA-SQM application)
- Distinguishing whether problems are in the Transmission or the IP parts of the network (via EAA-SQM enhanced correlations)
- FM-specific improvements:

    - Alert Reduction (over 80 %) through Gateway Aggregation
    - Multi-domain Correlations
    - PM Threshold Crossing Alarm (TCA) in a FM window for performance impact on alerts or vice versa.
    - Cross Product Integration through suggestions in PM/SQM and custom integrations in Alert Manager.
    - Integrated FM/PM via Topology Analyzer
    - FM Summary Dashboards, per day, and per Managed Object Class (MOC)

- Implementation of Auto Incident Ticketing by integrating EAA with CA's SDM system for ticketing
- Easy detection of heterogeneous sites that are down by correlating inventory/topology information. The EMS-based FM did not have this cross-domain correlation.

MYCOM OSI provides Service Assurance to some of the world's largest Tier 1 telco operators. Its Service Assurance software visualizes, automates and optimizes network and service quality across hybrid telco and IT networks by integrating real time assurance with closed loop automation and analytics driven by AI/ML.

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