Enabling consolidation and growth to go hand in hand

Summary: Pakistan Telecommunication Company Limited is the country's largest communications service provider, offering voice, data, Internet, and TV services. It chose to use TM Forum Frameworx to help it consolidate its network operations when facing a period of rapid growth in its drive to improve the reliability of the network and its customers' experience. As a result it suffers 50 percent fewer network alarms, has 30 percent fewer outages across multiple networks and the time to fix cut fiber cables has fallen by 40 percent. It has also enjoyed a 5 percent drop in indirect costs thanks to better visibility across its infrastructure.

Pakistan Telecommunication Company Limited (PTCL/Ufone) is the country's only integrated communications service provider (CSP) that offers bundled voice, data, Internet, and TV services. Since PTCL was privatized in 2005, it has initiated a series of modernization projects. Today, it is Pakistan's largest broadband service provider, with over 400,000 subscribers across 1,000 cities, and has 80 percent market share. It is also the country's first 3G wireless broadband provider.

In 2008, PTCL chose to work with a number of vendors and TM Forum to create a new Network Operations Center (NOC) because it knew it was about to experience rapid growth and needed to be more streamlined and agile operationally. As it turned out, PTCL tripled its broadband subscriber numbers and doubled its broadband coverage in 2009. The NOC consolidates what were previously several dozen separate element management system functions, which didn't provide a centralized view of the company's network.

A central NOC is now located in Islamabad, with regional NOCs in Lahore, Rawalpindi, and Karachi. Together, they control, monitor, and manage the PTCL network through a centralized platform. The project's benefits include:

- 40 percent reduction in time to restore cut fiber optic cables, with associated operating expense benefits;
- 30 percent fewer wireless local loop, broadband, and MPLS outages, due to the faster resolution of fiber cuts;
- an estimated 5 percent indirect reduction in capital expenditure in the transmission/digital cross-connect domain due to improved visibility of network resources and their utilization;

- 50 percent fewer network alarms, increasing service availability.

In addition, the NOC provides full visibility into cross-domain performance, traffic, and trends. This supports network planning for expansion and optimization, along with improved visibility into operational data for networks and operations, supporting better decision making.

Centralized NOC's project history
PTCL's fixed and wireless network consists of multiple technologies, including time division multiplexed and next generation network (NGN) C4 and C5 switches and routers, synchronous digital hierarchy, dense wave division multiplexing, narrow wave division multiplexing, IP, and wireless local loop. The network includes equipment and software from vendors, including Siemens, ZTE, Loop Telecom, Tellabs, CA Spectrum , Tekelec, and Huawei.

Before 2008, the company's network was managed in 40 separate operational centers. There was no central NOC providing network management for fault resolution, nor had it root cause analysis capability. This resulted in lengthy time periods for service restoration: a serious issue given the frequency of fiber cuts across the country, and an impediment to PTCL's goals of providing excellent customer experience.

For this reason, the centralized NOC project had a number of business goals, to achieve its ultimate aim of expanding its market leadership in Pakistan. It also sought to improve productivity and business agility while simultaneously reducing costs. Disaster recovery through the NOC was also a priority.

To achieve these goals, the centralized NOC project included organizational as well as technology changes across multiple business units. Software was deployed to monitor and manage the multi-technology and multi-vendor network; and to carry out performance management for NGN, transmission, and signalling domains as well as to monitor key performance indicators (KPIs) for effective management of PTCL's operations.

Frameworx aids transformation

Frameworx played a central role in the project. TM Forum processes allowed the company to create process abstractions such that both national and regional NOCs are treated as one virtual entity: the same processes apply regardless of technology, location, domain, or vendor.

In addition, PTCL says Frameworx supported lower costs throughout the project, based on the deployment of automated instead of manual procedures, standard process definitions, reusable processes, and the use of commercial off the shelf software. Automation efficiencies derived, in particular, from automated problem detection, trouble management, and the automated escalation of issues.

Specific Frameworx benefits were right across the board. The Application Framework (TAM) enabled PTCL to identify applications and to assess vendors' capabilities, thereby helping the service provider draw up a technology roadmap.

The Business Process Framework (eTOM which is mapped to the Infrastructure Technology Information Library – ITIL) helped optimize fault management and performance management processes. It also provided more meaningful KPI metric data for the implementation of service quality management to drive a customer centric operational model. In particular, it provided the processes needed for:

- weekly and monthly performance and health checks;
- network monitoring;
- issue detection and resolution;
- alarm management;
- performance management;
- trouble ticketing;
- work order management;
- outage management.

The JSR91 standard was used to implement interfaces between fault management and trouble ticketing systems to simplify managing problems, as it is more flexible, and less costly.

The use of TM Forum MTNM model is expected to reduce integration costs and risks since the OSS and network management systems already support the interface.

Project status today

PTCL announced its new NOC in November of 2008, and the project was a finalist for TM Forum's Operational Excellence award in 2010. Building on this work, PTCL designated 2010 as the 'Year of Customer & Employee Care', with a strong focus on quality of service for the company's customers. Along with hundreds of retail outlets, four contact centers, and multiple touch points to serve its customers, the company's newly enhanced NOC allows it to provide a more reliable network underlying its quadruple play of services to both consumers and business customers.

Moving forward, PTCL sees the NOC platform as essential for its goal of diversifying future services to increase revenues, and to provide statistics to support ongoing trend analysis and network reengineering.

PTCL's parent company operates in 19 markets worldwide, and has a growing global footprint. PTCL itself has many customers with business outside of Pakistan, and is working to globalize its brand. To support these developments, PTCL is looking to expand its use of Frameworx components in the years to come. This will include improvements to inventory management and order fulfillment processes, as well as data modeling based on the Information Framework (SID).