New Network, Old Tools?
A Systematic Approach to Supporting The Network of Change
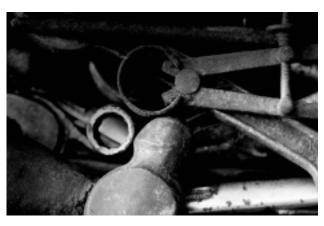
By: Adrian Alonso

The human body has been the biggest beneficiary of technology advancements in modern times. There is not a living human function that hasn't been monitored, repaired or managed with sophisticated tools. The same should be said for the networks that are the lifeblood of today's anytime, anywhere communications. But too often, CSPs and large enterprises are working with tools that are out-of-date, highly customized, and temperamental, rendering some connections DOA.

Genesis: Network Management Tools Market Born of Necessity

Whether you're in telecom and call it 'service assurance', or you're in enterprise and call it ITSM (Information Technology Service Management), managing a vast network of voice, data, media and applications has grown significantly more complex in the past ten to fifteen years. Fortunately, tools to manage them have become more available. In the early 1990's, single-vendor networks prevailed and included proprietary vendor-based NMS (network management systems). There were immensely fewer devices to manage, and unpublished interoperability standards from standards bodies like the ITU (International Telecommunications Union) and others, prevented broad development of tools to monitor and manage a network. Then in the late 1990's, the NMS

market took a major leap forward when interoperability standards were made public, allowing admins to follow a set of guidelines and best practices, and new network management platform vendors came on line. Meanwhile, the network grew as computing devices and mobile phones proliferated organizations, and the internet became the catalyst of human connections.

Today, the service assurance and ITSM markets are in another explosive growth phase. Market analyst firm Analysys Mason projects the service assurance market to grow to $4.5B by 2019, a 12 percent compound annual growth rate between 2014-2019. The dramatic rise stems from the need to support more consumers using more services. Stoking the need for service are three driving factors: convergence, competition, and churn.

Convergence. Networks of today are a mash-up of phone, data, voice and video giving consumers more choices in services than ever; meaning vendors have to provide support across broader applications.

Competition. Just like in the game Monopoly®, he who has the most property – or in the case of service providers, the biggest network – wins. Mergers and acquisitions have created mega-networks while offering consumers more services and lower prices.

Churn. Customer attrition has a measurable impact on revenue. As such, the over-arching goal for service providers must be improving QoS (quality of service) and thus, customer satisfaction.

Supporting the Network of Change

Networks are alive with change. To meet customers' demands and stay ahead of the competition, hardware and software developers are driving unprecedented advancements in how we communicate. Likewise, it is up to the managers of these networks to support their customers as well as their business.

New Application Monitoring Tools Can Predict the Future

The reliance on IP-based applications in the enterprise, not to mention those relied upon by consumers, is increasing rapidly. And with this rise in application use comes ballooning amounts of application traffic volumes

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on the network. As the traffic increases, applications need to be monitored closely to ensure QoS. Modern service assurance tools can use real-time and historical analytics to identify, isolate and resolve problems before they impact the business. A converged service assurance solution can monitor and manage across networks and services.

Network Management Tools Can Help You Dig into Rich Data

Customer demand for data is requiring companies to grow their networks. Having fail-over or alternative paths and providing QoS is mandatory as networks scale.

The network can provide a rich source of data for an organization. Companies have to capture this data to analyze the customers' use and prepare for the next demand of service and predict where to invest in their network. Five to ten years ago, companies only focused on whether the network was up or down and were reactive to its current state. Now, NOC managers have to be more proactive. Instead of consuming network data as if it is standalone, organizations need network management and monitoring tools that help them mesh network data with other types of data

Service Assurance Maturity Model

Optimal
- IT & Business Metric Linkage
- Policy Based configuration
- Self Provisioning
- IT Improves Business Process
- Business Planning

Managed
- Service Defined
- Quality Goals Established
- Guaranteed SLA's
- Monitor & Report on Services
- Capacity Planning

Proactive
- Performance Monitoring
- Trend Analysis
- Threshold Monitoring
- Problem Prediction
- Automation
- Asset Management
- Change Management

Reactive
- Best Effort
- Firefighting
- Inventory Management
- Alert & Event Management
- Document Problem Management Process
- Incident Management
- Problem Management

Chaotic
- Ad Hoc
- Undocumented
- Unpredictable
- Multiple Help Desks
- Minimal IT Operations

PHASE 1   **PHASE 2**   **PHASE 3**

to make it more usable. Network topology information and customer information are just a couple of examples. When an alarm comes in from the network or some fault happens, you need to know if the customer affected is a premium customer. With intelligent network tools, aggregated data can not only help managers be more proactive, but can help executives define strategy.

Unified Tools for the Rollout of Virtualization

Network virtualization is being touted as a game-changer for the telecom industry; enabling CSPs break through revenue ceilings by offering tiered services at tiered pricing. Differentiating services to different classes of customers is not easy, cheap or practical in a non-virtual network environment. And although virtualization may be the holy grail of higher revenues, it's not going to happen overnight. Networks will be a hybrid of virtual and non-virtual and, thus, more complex to service and manage. Service assurance platforms need to be able to manage virtual and non-virtual networks side-by-side; monitoring new control processes introduced by SDN/NFV while tracking hard-coded and custom processes of older systems.

Moving from Chaos to Calm – A Process Approach

When looking at how and if you are able to properly service your network, the most important data point is whether or not your customers are getting the services they want, when they want them and need them. It's no longer about the network, but about your customers.

gen-E has developed a network management tools maturity model used to help clients understand where they are today and where they need to go. The model has three distinct phases (Fig. 1). As organizations add and upgrade Service Assurance and ITSM tools, they move from a highly reactive to a highly managed environment.

Phase I – Chaotic and Reactive

In a chaotic environment, the organization is using old tools, and having a hard time keeping up with faults and events. Moving into reactive mode, there has likely been some integration into a trouble ticket system and, based on the information gleaned about the location and user, the event is able to get routed to a specific group for trouble shooting and resolution.

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Phase II – Proactive and Managed

Moving into a more proactive environment requires predictive event analysis. This is when administrators can stop a fault before it happens based on historical and usage data. The benefits to moving to a proactive environment include a reduction in events to operations, a reduction in repeating events, and a reduction in known event classes.

Phase III - Optimal

The optimal state allows CSPs and enterprise organizations to keep their networks up and running while managing customers based on SLAs. Processes are in place to manage the network and automate repetitive tasks. In the optimal scenario, IT is strategically linked to other parts of the business and has a positive net result on business planning.

Moving Through the Phases

The first step in upgrading aging network tools is to have a professional conduct a full analysis of your network operations. A network evaluation can highlight outdated tools, unused contract credits, and redundant or ineffective processes. From there, your vendor can provide an implementation plan that gets you to the optimal state given the time and the resources budgeted.

The execution of the tools and process upgrade is one of the most critical elements to consider. Your vendor must be able to provide regular monitoring of your systems and help you identify growth opportunities to better serve your customers. Upgrading your network management system is not a single point in time activity but rather an investment that – if tended and reviewed and tweaked

regularly – can pay huge dividends. If you are not seeing improvements in your KPIs, and if your mean time to repair doesn't improve, you may not be benefiting from the tools you have.

In order for telcos, and large, complex businesses to continue to meet consumers' demand for new applications, speed, performance and reliability, the people charged with keeping the network running at peak performance need the tools that have broad reach across the organization, have the ability to analyze the data that is captured, and have the ability to predict outcomes based on history, performance metrics and industry best practices.

Unified Service Assurance from gen-E
Bringing Value to the Equation

gen-E has nearly 2 decades of experience helping some of the most recognizable brands in telecom and enterprise keep their networks running at peak performance, and meeting their customers' demands. Applying our industry-lauded Unified Service Assurance framework, we have helped our customers work through network upgrades, acquisitions, and system consolidations. Our goal is to work across organizational silos and allow our technology to correlate events and use analytics to help identify problems across the entire network faster, reduce MTTR, and get to the optimal state of network management. For more information, **click here**.