

# Communication Service Providers Must Adopt a Customer-Centric Service Assurance Strategy



by Arindam Banerjee | May 2009

## Executive Summary

With voice revenue flattening or declining, traditional carriers are being forced to look at different opportunities to increase customer ARPU and decrease their dependence on subscription-heavy business models. Fueled by the rapid penetration of broadband and the adoption of Internet Protocol (IP)/MPLS core networks, carriers are looking to deliver innovative, profitable services, encompassing voice, video and data, over the same transport network. Broadband adoption creates opportunities for fixed, mobile and cable operators to provide convergent and bundled service offerings.

Traditional business models are being severely disrupted as new innovations emerge and take advantage of the low market-entry barriers created with IP and Internet technology. At Yankee Group, we believe in the vision and philosophy of the Anywhere Network<sup>®</sup>. The Anywhere Network is our vision of a seamless and always-accessible intelligent infrastructure that provides a connection for everyone to everything from anywhere and in theory brings unprecedented service opportunities to the end user.

Anywhere Consumers prefer choice, control and convenience as they interact with each other and create, share and collaborate at work and at home. The vendors of the software systems that support these activities must realize that they have a direct impact on the customer experience at every step of the interaction—as they browse, buy, use and renew those services. As shown in Exhibit I on the next page, we define the customer experience as being comprised of three pillars:

- A comprehensive portfolio of services, applications and devices
- The high-performing network
- Reliable channels of service delivery such as self-service, the call center and retail store

In this complex hypercompetitive environment, customer experience management (CEM) will play pivotal role in helping communication service providers (CSPs) differentiate themselves from their competition. We believe customer attention and loyalty will be the most valuable market assets in the coming decade. It is in service providers' best interest to focus on infrastructure, systems and processes that can command and leverage that loyalty.

In this Yankee Group white paper, we discuss what we mean by CEM, review the critical components of next-generation customer-centric service assurance solution and provide details about HP's solution offering and how it addresses customer-centric service assurance.

This custom publication has been sponsored by Hewlett-Packard.

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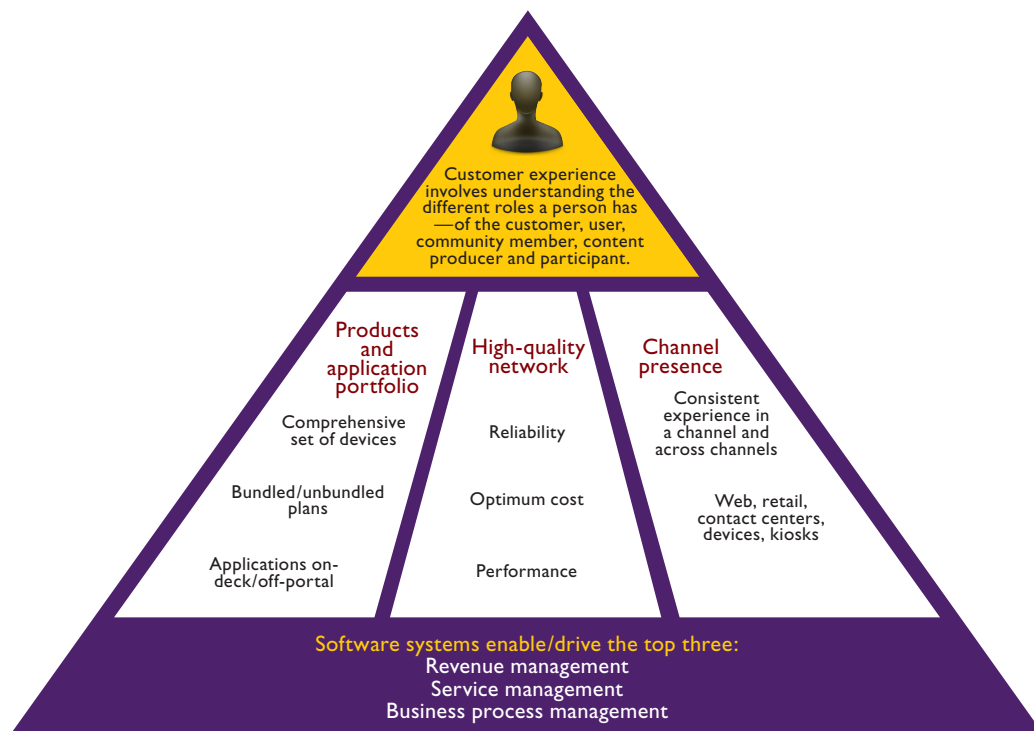
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### Exhibit I.

#### Customer-Centric Software Systems Will Drive the Anywhere Customer Experience

Source: Yankee Group, 2009

#### Anywhere customer experience for a service provider



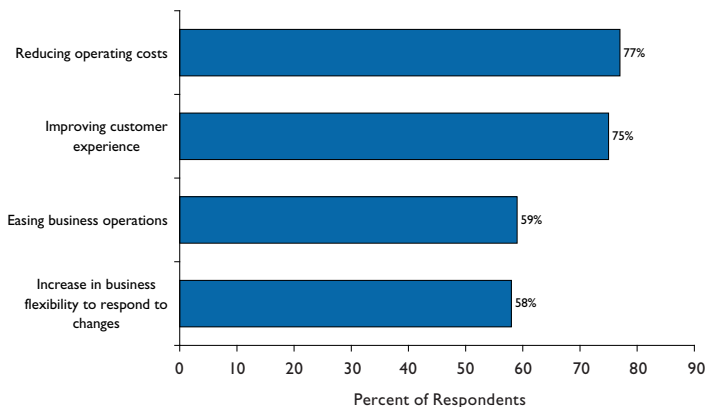
# I. Demystifying Customer Experience Management

We see service providers involved in transformation projects with a focus on the end customer rather than just on network and software solutions upgrade. A global survey conducted by Yankee Group of 100 C-level executives illustrates the critical need for service providers to invest in transformation projects (see Exhibit 2).

## Exhibit 2. Communications Service Providers' Main Reason for Investing in BOSS Transformation Projects

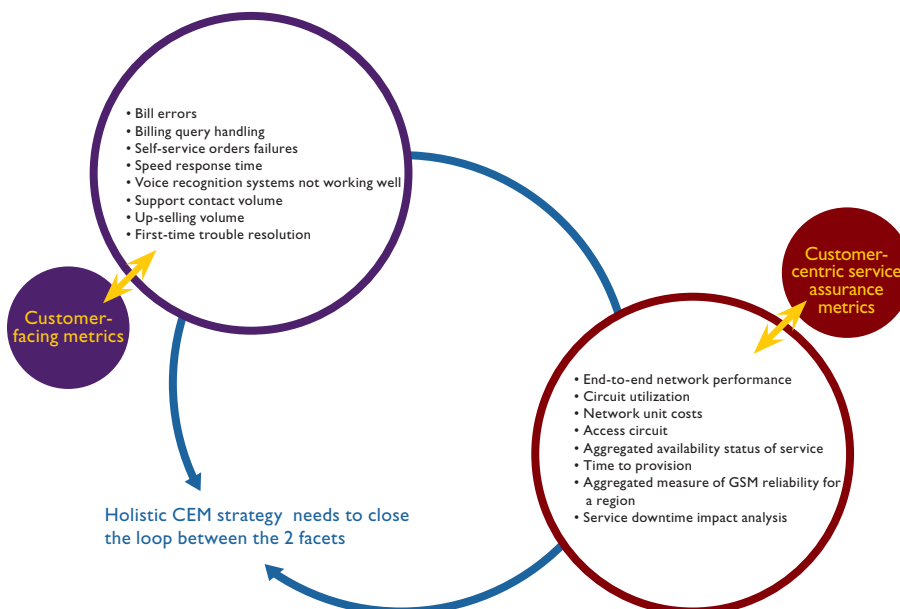
Source: Yankee Group, 2009

What are the main reasons for investing in BOSS transformation projects?



## Exhibit 3. The Building Blocks of End-to-End CEM Strategy

Source: Yankee Group, 2009



Yankee Group defines customer experience management as a complex correlation of metrics that not only includes operational measures and quality-of-service (QOS) measurements, but also emotional dimensions relating to the nuances of customer expectations, which do not easily get captured in operational statistics or measurements. It addresses the need to take into account all facets of the interaction between the service provider and the customer and involve every customer touch point that spreads across sales, customer care, billing, collections, provisioning and assurance, providing consistency and transparency across all possible customer interactions.

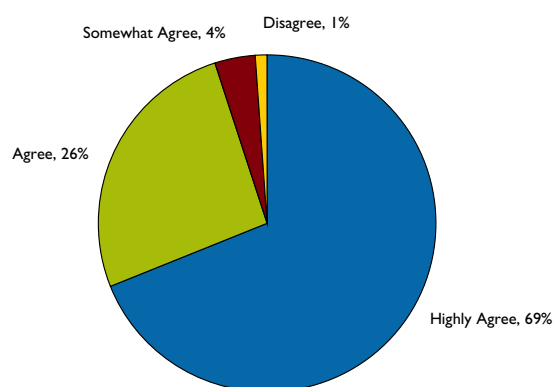
We believe CEM consists of two major components: the customer-facing side and the network-facing side. In this white paper, we focus on customer-centric service assurance. Customer-centric service assurance measures whether each customer receives the expected or contracted quality of the service he or she has subscribed to, and determines how the service assurance business process needs to be adapted to support customer-centric operations. It encompasses the online or postprovisioned stage of the service life cycle and the behavior of a service from the time it is provisioned to the time when it is suspended or deactivated. Customer-centric service assurance solutions use network-facing parameters that catalyze online assurance capability by measuring and providing pre-emptive assurance capability for subscribers through the entire life cycle of their provisioned services. Exhibit 3 illustrates the key facets of CEM strategy and how these facets need to combine for end-to-end CEM strategy.

In a global survey conducted by Yankee Group of more than 100 service providers' C-level executives, most service providers cited they strongly believe that improving the quality of the customer experience increases ARPU. Exhibit 4 illustrates that the majority of C-level executives agree that customer experience is the last bastion for competitive differentiation.

**Exhibit 4.**  
**A Positive Customer Experience Is Directly Linked to ARPU Increase**

Source: Yankee Group, 2009

Service providers strongly believe that improving the quality of customer experience increases ARPU.

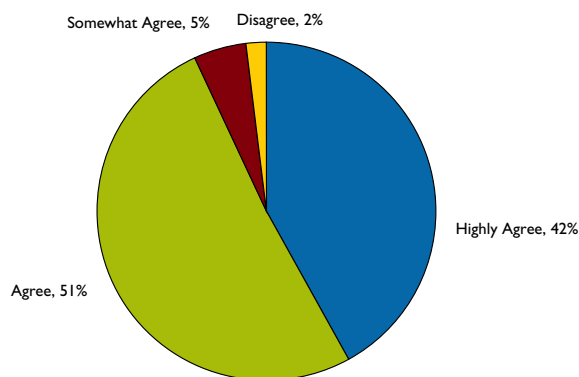


We see most service providers focusing their transformation projects on enhancing the customer experience rather than just on upgrading network and software solutions. Hence, transformation projects that are based on providing a holistic customer experience demand OSS, BSS and customer-facing systems. Together these systems take into account not only the service provider's service strategy, but also all facets of its internal and external business processes and how those impact its customers. Another global survey conducted by Yankee Group of 120 C-level executives showed that service providers strongly agreed that their internal processes are positively linked to customer experience (see Exhibit 5).

**Exhibit 5.**  
**Communication Service Providers Agree That Their Internal Processes Are Linked to the Customer Experience**

Source: Yankee Group, 2009

Do you agree your internal business processes are linked to customer experience?



We strongly believe that the only way CSPs can provide a holistic customer experience is by optimizing their internal and external business processes. Unifying and automating the complete end-to-end, contact-to-cash process would help service providers deliver a differentiated customer experience. CSPs' strategies need to reflect customer demands and take into consideration customer impacts. Key performance metrics need to reflect customer satisfaction metrics, which need to align with process excellence. Therefore measures such as activation time, call-center response time and trouble resolution time become critical to a complete customer experience management capability.

**II. Critical Components of a Next-Generation, Customer-Centric Service Assurance Solution**

Yankee Group defines customer-centric service assurance solutions as those that monitor service performance based on the customer's view, not the network manager's view. Based on defined key performance indicators (KPIs), key quality indicators (KQIs) and service-level agreements (SLAs), these solutions help service providers connect network and service performance with the end-user experience. This helps augment customer satisfaction, enables subscriber ARPU growth and positively impacts service

providers' profitability. The biggest challenge for service providers launching next-generation network (NGN) services is achieving the reliability of legacy services and meeting the stringent subscriber QOS expectations for migrated and new services. Service providers are gradually coming to terms with the fact that the customer's perspective of service quality is a critical yardstick for service quality assessment. Therefore, they are considering customer-centric service assurance solutions as a way to bridge the gap between the customer experience and network centrality.

Exhibit 6 illustrates what Yankee Group views as the fundamental architectural blocks and key features needed for customer-centric service assurance solutions.

Let's discuss in details some of the key functionalities of service assurance solutions.

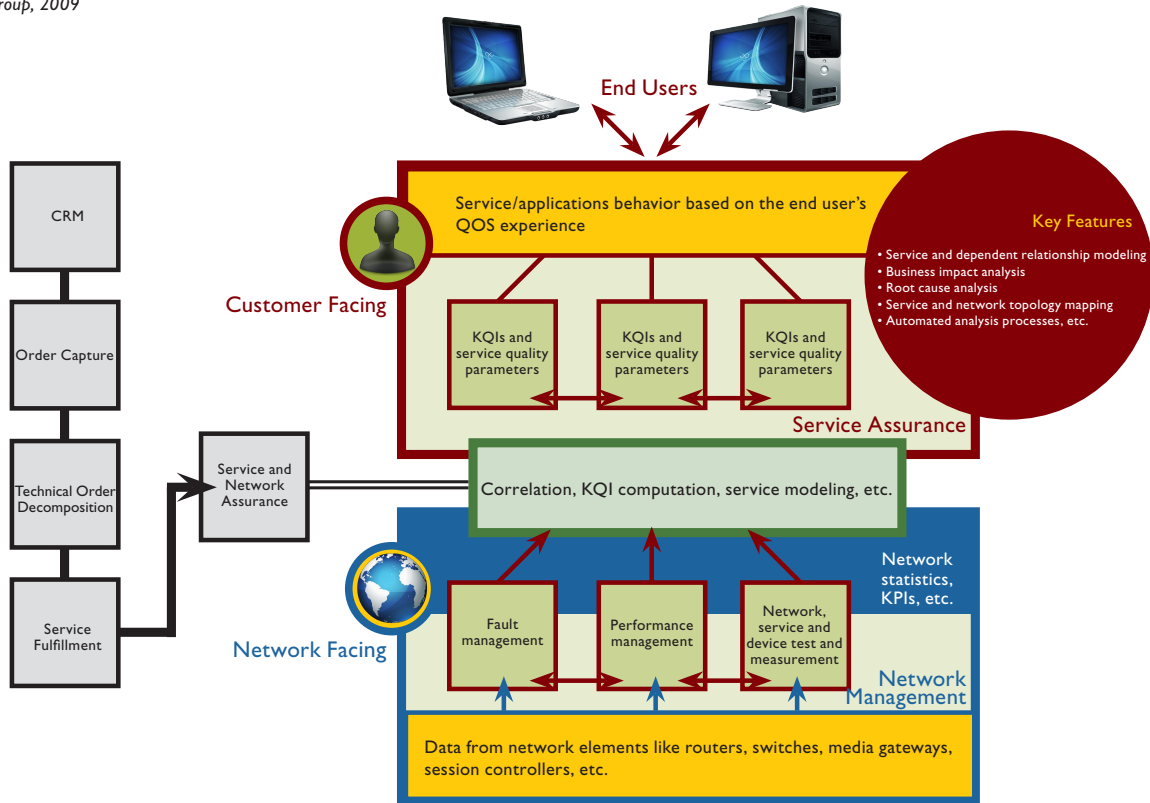
- Efficient correlation and service modeling capability:** Service assurance solutions need to integrate with multiple data sources like fault management, performance management, activation, software and hardware probes, inventory management and other network-facing systems. Data obtained from these systems will need to be integrated, correlated and

mapped with fulfilled subscriber services and offered services to link network resources and fulfilled services. Service modeling involves identifying network elements—such as routers, servers and other network infrastructure—that support particular services and abstracting the service-affecting elements from the network infrastructure.

- Unified service-level view is becoming crucial:** Collecting network performance data and using analytical tools to understand subscriber behavior, usage characteristics and application performance will help optimize a subscriber's service experience. Network-facing, low-level KPIs are combined to develop KQIs that closely mirror the service-level contracts. This helps monitor customer-specific service behavior. These solutions enable users to create user-defined KQIs easily. They also enable easy correlation across subscriber services, service resources and supporting network configuration according to the carrier's needs. Service assurance solutions should help service providers view services in the context of the end-to-end infrastructure over which they are provided. It must be capable of applying quality of experience (QOE)/QOS, performance or KQI data within the model to automatically correlate user experience, business metrics, etc., with the underlying end-to-end infrastructure.

**Exhibit 6.**  
**Key Ingredients of Customer-Centric Service Assurance Solution**

Source: Yankee Group, 2009



- **Efficient discovery mechanism is pivotal for effective service assurance solutions:** An efficient discovery mechanism is critical for a robust service assurance solution because it helps identify network inventory resources, detailed IP routing topology information and the interrelationships between the application server and application environments. For subscribers as well as enterprise customers, a discovery mechanism helps carriers gain visibility into their network infrastructure as well as into the applications supporting the utilized services, which aid in efficient service modeling. In case of problems, efficient and automated service modeling helps in faster identification, isolation and resolution of problems.
- **Automatic root cause analysis and pre-emptive service management:** Automated root-cause analysis is the lifeline of an effective service assurance solution. It helps investigate the reasons for the failure of service objectives and isolate the network resources and subscriber services affected by service degradation. In turn, this information also helps identify service-related problems so that quick corrective measures can be taken. Ideally, the closed-loop approach to service fulfillment solutions would catalyze the corrective measures. Based on analysis fulfillment, systems could send out provisioning commands automatically without manual intervention to fix a lot of the service-related problems. Pre-emptive service assurance is the critical market need right now. It is imperative that service fulfillment and service assurance solutions work strategically and in closer proximity than they have ever done in the past.
- **Robust reporting capability is critical for service assurance solutions:** It is of critical importance that detailed reports for KQIs and SLAs can be generated with graphical representation. Compliance reports, performance reports as well as historical report generation capability will be important for any service assurance solution because they can provide information on health, utilization, threshold and performance-related data.
- **Analytics and business intelligence will play a key role in next-generation service assurance solutions:** Service providers need to prioritize their network and services to provide optimum service to their customer based on their profitability. Service providers must charge based on class of service and provide the greatest QOS to their most profitable customers such as their enterprise customers. Business intelligence (BI) and analytics will play a key role in segmenting customers based on profitability so that service providers can prioritize support resources during times of problems accordingly. BI analysis can also be used in marketing and sales

because service usage patterns can reveal new bundling and retention strategies. Service usage, maintenance and support visibility provide key cost metrics to finance organization, which help calculate service profitability metrics.

- **Service assurance solutions need to align with customer-focused business processes:** Service assurance solutions will need to have a profound service management component. Service management is used to gain an understanding of where service quality for different services stands, what combinations of different service quality scenarios are possible and which service quality scenarios deliver the greatest value to the CSPs. IT service management (ITIL), which has traditionally been looked upon as best practices methodology for IT service management, is gradually being introduced in the service management domain. There is lot of work being undertaken by vendors under the guidance of TMF to align eTOM and ITIL. We believe eTOM, which is an external customer-focus framework, and ITIL, which is focused on serving internal IT customers, are complementary frameworks that could be very useful to carriers and service providers if proper mapping, categorization and alignment can be done.

### III. Vendor Analysis: HP Solutions Consulting Services (SCS)

CSPs understand that siloed organizations, processes and applications prevent their move to customer-centric operations. For example, multiple, non-integrated applications from multiple vendors that reside in the element, resource and service layers inhibit efficient operations. We see two broad trends within the communications market driving service assurance forward into a role of increased prominence.

The first is the increasing importance of operational efficiencies and cost savings for today's CSPs. The ability to automate service maintenance while reducing the time and man power spent overseeing, managing or maintaining a service is critical, particularly in an economic climate that puts increased scrutiny on operational expenditures. The second broad factor is the migration of a variety of distinct services to a converged IP environment. In the legacy world of pure voice communications, service management was a relatively straightforward, albeit critical, task. Solution providers would produce KPIs to track things such as call quality, number of call transactions, signaling issues, basic dial tone services and call setup delay. These KPIs would then be cross-tabbed with customer experience indicators and generate alerts for affected subscribers.

In a world where all communications were similar and predictable, it was a relatively linear process. Today, CSPs are operating networks where a myriad of different traffic types are competing for the same scarce resources. This means that on both the network- and customer-facing sides, different performance metrics need to be accounted for and subscriber requirements will vary wildly. We believe a holistic customer-centric service assurance solution needs to encompass subscriber experience metrics as well as application performance parameters to provide an end-to-end view of service behavior.

HP is a leading vendor in the service management market. Exhibit 7 provides a list of some of its already existing solutions that are deployed globally by many leading service providers.

**Exhibit 7.  
HP’s Integrated Assurance Solutions Portfolio**

Source: HP, Yankee Group, 2009

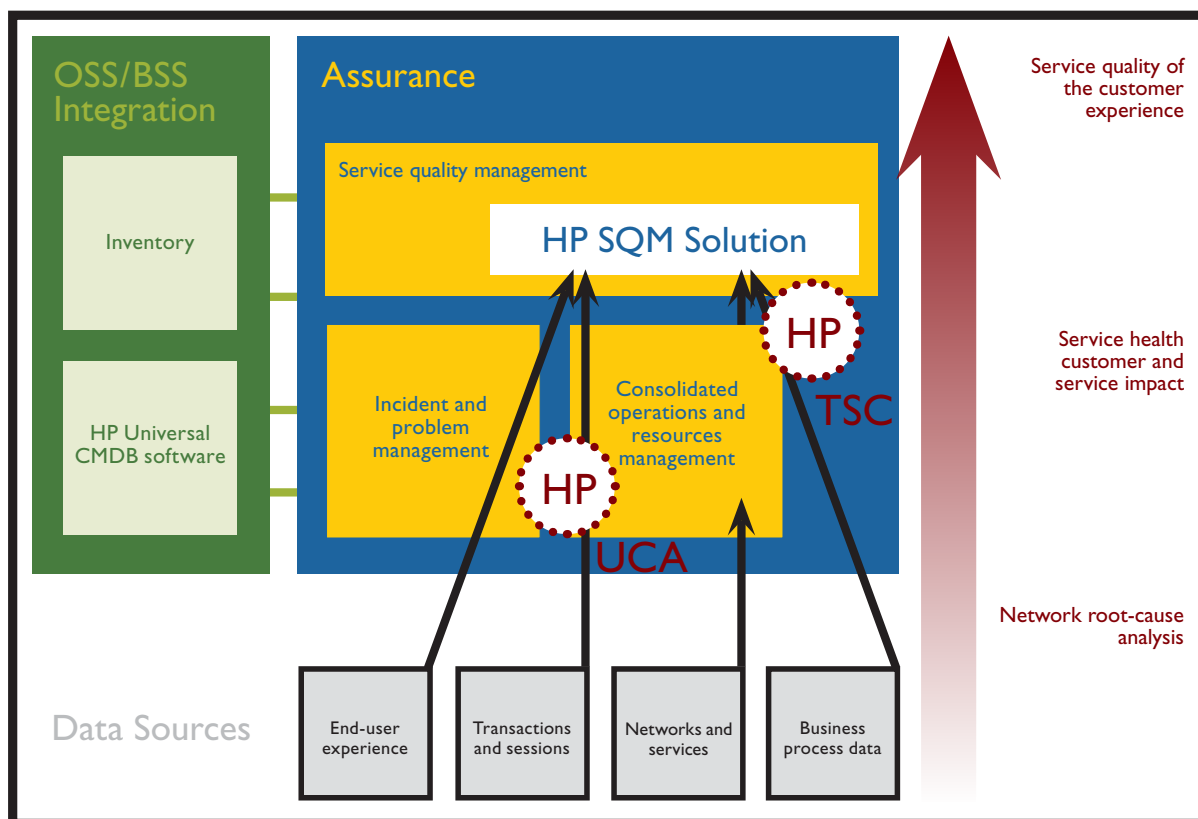
| HP Service Management Portfolio                                   | Description  |
|---|--|
| HP Service Management software                                    | • Integrated IT service desk suite that utilizes ITIL-based best practices and also addresses the eTOM problem management function   |
| HP TeMIP  | • Automates and prioritizes key operations tasks by consolidating network information into an integrated OSS to unify and integrate multiple management domains across wireless, wireline, IP and IT environments. HP TeMIP integrates broadly with the HP portfolio as well as key partner products to act as single manager of managers. |
| HP Network Node Manager (NNM) Software                            | • Automates the development of an accurate topology of the physical IP network, virtual network services and the complex relationships between them, then uses that topology for intelligent root-cause analysis   |
| HP Route Analytics Management Software                            | • Provides real-time visibility into the dynamic routing operation of the network to enable fast identification and resolution of network problems   |
| HP Operations Center  | • Monitors and reports on the health and performance of the heterogeneous IT infrastructure by collecting and correlating information from across the organization and service infrastructure  |
| HP End User Management Software                                   | • Provides real-time visibility into users’ quality of experience by using active business process emulation and real-user monitoring  |
| HP Business Process Insight and Business Process Monitor Software | • Correlates business health using business metrics with supporting applications and infrastructure to assess the impact of an underlying problem in business terms; helps identify availability and performance issues before they impact customer experience   |

HP has launched a few new solutions that enhance its service assurance portfolio, making it even more customer-centric. Its solution portfolio very closely aligns with Yankee Group’s vision of the customer-centric service assurance solution explained in previous section. Let’s take a brief look at the newer additions to HP’s customer-centric assurance suite and what it encompasses (see Exhibit 8 on the next page).

- HP Service Quality Management (SQM) Solution:**  
The HP SQM solution helps CSPs optimize and consolidate their operations processes, shortening delays in service problem detection, identification and resolution. It provides a comprehensive service quality management solution that enables service providers to easily manage services from end to end by monitoring associated service levels and QOE in real time across the entire network and IT infrastructure.
- HP TeMIP Service Console (TSC):** HP TSC provides an end-to-end service view by monitoring the health of network resources and the services carried over the network. Built upon the HP TeMIP solution and the HP Service Management Foundation, HP TSC uses the network resource data collected by HP TeMIP, continuously computes and propagates service component statuses in the service tree and monitors compliance with service levels in real time.
- HP Unified Correlation Analyzer (UCA):** HP UCA is a problem determination, root-cause and service impact analysis product that has been designed to offer a radically different approach within large, complex and fast-changing network environments. By utilizing a topology-based approach to correlation, HP UCA is able to accurately pinpoint the root cause and impact on services across multiple technology domains.
- HP Service Management Foundation:** The core HP SQM components included in both the HP SQM Solution and in the HP TeMIP Service Console are referred to as the HP Service Management Foundation. It is made up of a comprehensive library of predefined service components objects, service models and KQIs based on the SID model. After deployment, these models provide an extension to the HP Universal Configuration Management Database (UCMDB), referred to as the Telecom Universe. Along with the Service Designer, the Telecom Universe allows for quick development of new service models in a standardized way and provides greater flexibility in the way predefined KQIs may be attached to service objectives with associated thresholds. The knowledge about the services, service components and their interactions is captured in UML class diagrams, which are stored in the UCMDB repository.

**Exhibit 8.**  
**HP NGOSS—New Customer-Centric Assurance Features**

Source: HP, Yankee Group, 2009



**IV. Conclusions**

Service providers are undergoing transformation projects to transition to IP transport and adopt next-generation networks to remain competitive. All the infrastructure trenches are being dug with the sole purpose of launching new, innovative services and reducing operating expenditures. Just providing and fulfilling new services is not enough. It is critical to assure that the services launched are delivered to subscribers with expected or exceeded QOS. The only way CSPs can keep their subscribers happy and reduce churn is by continuously monitoring provisioned services and maintaining optimal QOS through the entire life cycle of the provisioned services. Hence, CSPs need to treat customer-centric service assurance solutions as a critical component of any NGN transformation project. It is imperative that CSPs put more emphasis on service quality and treat their subscribers with the respect they deserve. Vendors need to provide solutions that have the capability to correlate business impacts with subscribers' online services behavior. Service correlation is extremely important, but it is more important that a carrier understand the business impact of service degradation. Hence CSPs need to select service assurance solutions that provide business impact analysis.

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