Pipeline

www.pipelinepub.com Volume 6, Issue 5

Customer Service Assurance: The Cornerstone of Customer Satisfaction By: Horacio Miranda de Oliveira

Introduction

There's a profound transformation underway in the telecommunications landscape. A new wave of "smart" devices – iPhones, BlackBerries, Android (Google) phones and netbooks – is redefining how people communicate. Compelling new applications like Facebook, YouTube and Flickr are redefining the meaning of service and injecting new players into the competitive mix. In this evolving telecom environment, getting service offerings to market quickly at a competitive cost is a major concern, but it's just half of the battle. The other half is ensuring service consistency once a new service is launched.

The shift from delivering low-bandwidth voice services to advanced data applications dramatically heightens the complexity of network management. The task of determining which subscribers are using the network and what services they are accessing is infinitely more complicated than simply tracking a voice call in the circuit-switched world. Customers have many more device choices and an abundance of service options; creating a seamless experience can be a daunting task. It requires the interworking of a staggering array of personal devices, access technologies and network resources.

Assuring network connectivity - from the moment the handset is turned on until the service is successfully engaged – is an essential function of good network management. Yet, with third-party partners and suppliers in the mix, many services fall outside of the operator's direct control. It's only when the customer accesses the application that all of the disparate pieces come together. Understanding service from the subscriber perspective, therefore, is essential to service quality and effective business strategy. Without the ability to understand how a service works each time a customer accesses it, operators can only hope that customers are getting what they expect.

Understanding the Customer Experience

Focusing on the customer experience is compelling operators to address a growing number of subscriber-focused service quality and availability issues: do roaming subscribers accessing voice and data have the same experience they do in their home network; is the subscriber's device configured properly; can customers reach the Web quickly and easily; are all of the service level agreements (SLAs) being met? Tools traditionally used to monitor network operations can't provide the answers to these questions. As a result, operators are looking for new tools that increase their ability to understand how customers perceive the level of service they receive every time they engage the network.

Customer Service Assurance (CSA)

There is perhaps nothing more frustrating to customers than discovering that the service they've paid for doesn't provide the level of quality they expect. There's a long list of potential issues – in the network, with third parties or even with the subscriber's device - that can negatively impact service quality. But, despite the complexity, understanding the customer experience is absolutely critical to long-term business success. To meet that goal, operators must aggregate data from a myriad of sources and systems. <u>Customer service assurance</u> (CSA) is an evolving business and operations function which does just that.

CSA is the process of collecting customer usage information from all practical sources as close to the customer as possible: the subscriber plane (mobile devices and endpoints), the network plane (elements, nodes, systems, and management databases), and the control plane (core network signaling equipment). A CSA solution enables operators to use this data to gain deep insight into customer behavior and correlate service quality with service uptake and usage.

An effective CSA strategy requires the aggregation and correlation of millions of continuously generated customer-usage transaction records that must be enriched constantly with information from other systems. CSA enables operators to understand what service combination customers really use as well what they may want in the future. And, operators can employ the subscriber-focused data to inform internal operations such as service planning, network planning, partner relationship management, billing and strategic marketing.



Implementing a CSA Strategy

The first step in defining any CSA strategy is to determine what network data is available. Given the high cost of monitoring all of the traffic, the service provider should be selective in the data gathering process, focusing only on the highest-value traffic. In order to measure a customer's experience with a specific service, the service provider (SP) must define a range of parameters that gives them the ability to flag negative experiences. Once the data gathering process has been established, the next step is to filter and assemble the data into building blocks of actionable information.

Operators then can construct data tables and <u>key performance indicators</u> (KPIs) with the information that demonstrates on an individual or aggregate level how the network and services traversing it are performing. This approach allows operators to understand the performance of the service for the entire subscriber base as well as usage conditions for select subscriber groups. For example, filtering

capabilities ensure that individual or group connections and services perform to pre-specified levels, a requirement tied to very important people (VIP) and corporate accounts with specific service level agreement (SLA) requirements and high-value services.

Operators can apply a customer-centric approach to address a wide variety of business issues. The following use cases demonstrate how a CSA strategy can be employed to address two common challenges – service problems with data-enabled devices and real-time service monitoring for high-value customers.

Use Case 1: Customer Frustration with New Smartphone Service Inconsistencies

The Customer's Perspective

A long-time subscriber upgrades his current mobile device to a more desirable smartphone. After inserting his subscriber identity module (SIM), the customer notices certain network-based services and device-enabled applications aren't functioning on the new device, even though they worked flawlessly on the old handset.

A customer finding himself in this situation doesn't know if the problems are the result of a bad smartphone, incompatibilities with previously used applications and the new device, or if there are operational inconsistencies between the new smartphone and the network. He just wants a device that works. The subscriber contacts customer support for help and demands immediate problem resolution.

The Operator's Perspective

This type of customer generates high average revenue per user (ARPU), accessing data services and the latest mobile applications. Like many early technology adopters, he frequently blogs about his service experience and writes device reviews. For this reason, the operator wants to quickly identify and resolve any service issues to avoid unwanted attention. Given the array of service options and data usage combinations that are available, it is virtually impossible to test every service/device combination before new devices are activated. Therefore, a key component of the operator's CSA program is to proactively discover network issues and device incompatibilities as soon after product launch as possible - before such issues are discovered by a large number of new device owners.

With a CSA solution, the operator can continuously monitor customer service usage data that is tied to a select number of measurement parameters. The data is aggregated by mobile device make and model, which yields voice and data efficiency profiles by device type. Performance that falls below certain thresholds is flagged for additional analysis and verification. Examples of such measures include:

• Voice efficiency – ratio of number of successful calls to the total number of call attempts; commonly called answer-seize ratio (ASR).

• Voice effective calls – same as voice efficiency but excludes data pertaining to subscriber busy, subscriber no answer and release of call before answer.

• Short message service (SMS) efficiency – ratio of SMS delivered compared with the total SMS sent.

• Additional SMS – average number of SMS sent that are not successful on first delivery attempt (FDA) and the average number of retried delivery attempts.

• Email efficiency – number of emails sent and received by the user.

Summary charts that define user device measures are generated by the CSA solution to identify consistent, problematic, device-specific issues. Figure 1 displays service efficiency ratio by device type and service.



Figure 1: Service efficiency ratio by device type and service.

Once a problem has been identified, the operator can take of number of actions, including:

• Engagement with mobile supplier – The mobile phone supplier is contacted to work out an acceptable remedy to any identified network compatibility problem.

• Automatic customer notification – When problems are identified, an automatic device upgrade alert is sent directly to the subscriber explaining the issue and planned course of action.

• Automatic network alarm notification – Using international mobile equipment identity (IMEI) data, the operator sets alarms to identify when a device on the "notice for corrective action" list is connected to the network; thereby requiring special attention.

• Customer interaction alert – In certain circumstances, the SP contacts the customer to review the problem, going through a series of resolution procedures, including recommended usage behaviors, to help them have the best possible mobile device experience. In cases where a software patch, update or new configuration is available, it is offered to the customer via SMS and or email to trigger

an automatic update. The operator may also prescribe special usage procedures to make sure subscribers have configured their equipment properly.

Use Case 2: Real-time Service Monitoring for Business Customers

The Customer's Perspective

A large corporate account secures a contract with a local service provider for mobile services and corporate email. The enterprise is familiar with the service options but has some concerns about the expected quality of service. Except for feedback from employees, the company has no way of objectively measuring network performance against promised levels of service quality.

The Operator's Perspective

The operator understands the value of establishing long-term corporate relationships based on network bandwidth, service availability, and service quality. To meet these objectives, the carrier must provide real-time service monitoring—by customer— for a number of operational parameters that will vary from one corporate account to the next.

With the appropriate tracking capabilities in place, the SP can offer each corporate account an individual SLA, tailored to meet the specific requirements of each business. By doing so, the SP can significantly increase its corporate customer base. The SP knows that maximizing its opportunities with enterprise contracts is business critical, since they represent large blocks of subscribers and a reliable revenue source.

Customer-level SLAs on a near real-time basis, accompanied with a view into the performance of the enterprise subscriber base, is fast becoming the norm for this operator. It believes such capabilities help create "sticky relationships" with major customers who now have the option of viewing service performance as a corporate aggregate or at the individual subscriber level.

To demonstrate the service contract, the operator uses its service monitoring and tracking solution to build reportable measures of <u>network performance</u>. The operator also uses this data to proactively measure key metrics to ensure that it will not incur contract performance penalties in case of service level violations. Reports from this system are shared directly with corporate customers or summarized through other business systems. The metrics in the reports are created by aggregating information points from a multitude of collected network data that generally focuses on three fundamental metrics including:

• Efficiency – Voice is provided as a ratio of completed calls over the total number of call attempts; SMS is provided as a number of first delivery attempts (FDA) over the number of confirmed delivery SMS.

• Service access response time – This is measured as the delay between a request and response from the Web or an application server providing a service.

• Bandwidth utilization – Measured as both uplink and downlink for every Internet protocol detail record (IPDR), which looks at statistics per subscriber and in the aggregate.

Conclusion

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A new wave of mobile applications and devices is transforming the way in which people communicate. As end-points become smarter, services more intricate and networks more complex, operators are looking for the next level of visibility to improve their insight into the subscriber experience. The systems they traditionally have relied on to manage network operations do not have the flexibility and granularity to provide the in-depth, real-time data and analysis required to support customer service assurance. To succeed in this dynamic market, operators need to move beyond basic network monitoring solutions to advanced systems capable of overseeing the end-to-end network connectivity and service experience – from the subscriber's device to the applications they access