



EXPERT OPINION:

Customer Service Assurance: The nervous system underpinning Customer Experience

In the changing fixed and mobile telecommunications services environment, competitive forces are driving increasingly complex integrated service offerings that compel communication service providers (CSPs) to alter their business strategies. The pace of service innovation is driven by customer need, bandwidth requirements, network / service complexity, and non-optimised business processes.



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Focusing on how customers experience their services results in improved customer satisfaction, customer loyalty, and up-sell potential. Everyone understands this, so why is customer dissatisfaction still on the rise:

- Average customer hold times for non-billing related calls are on the rise
- First call resolution percentages for data services are worsening
- Trouble resolution times for data services are an order of magnitude higher than they were for voice, and smartphone/residential gateway resolutions are even worse.

These items point to the fact that CSPs are struggling to meet quality and experience expectations for data services. In addition, the

end customers consider these to be lifeline services instead of the lifestyle services of the past. They are no longer 'nice-to-haves'; they are necessities that consumers will pay for.

Lifeline services must be assured. To realise this imperative, CSPs need more visibility to the actual customer experience. Most importantly, to truly improve the customer experience, a CSP needs real-time service impact quality and root cause analysis capabilities if they are to fully understand a network or service related issue, and have the ability to correct or mitigate customer-affecting problems.

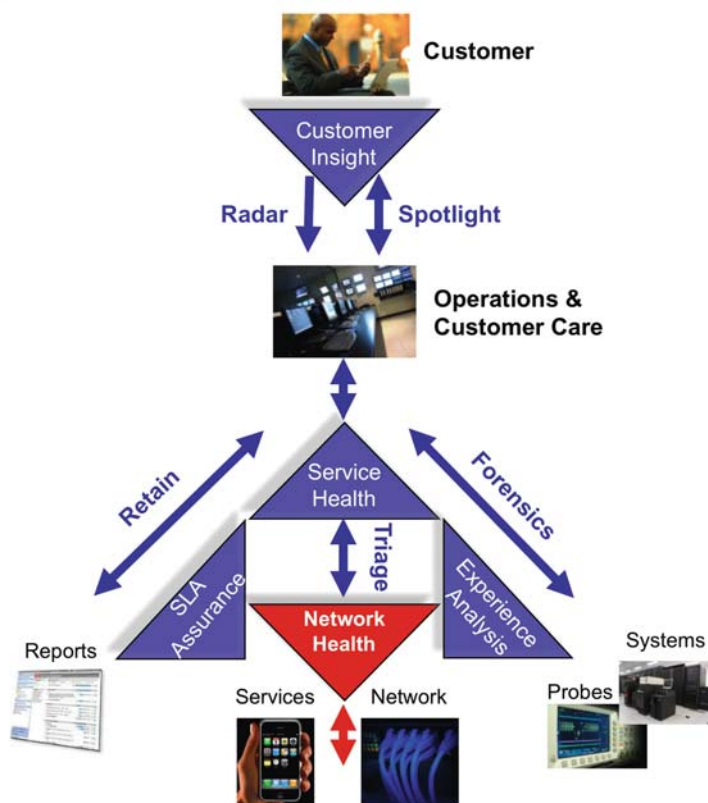
Customer service assurance (CSA), is the process of collecting customer usage experience indicators from all practical sources as close to the customer as possible; the control plane (network traffic), network plane (elements, nodes, systems, and management databases), and the user plane (devices). CSA uses this data to gain deep insight into customer behaviour allowing new insight into the relationship of service quality to the uptake and usage of the service.

It involves, when needed, the real-time monitoring of a customer's active service and the analysis of this data to isolate usage problems and to provide proactive mitigation of customer-impacting or service-impacting issues. CSA summarises usage information to note service usage patterns, trends and preferences needed by account managers, customer care agents, planning engineers, marketing, operations teams, and executive management.

We believe there are four core functions for addressing the business and customer management issues surrounding CSA:

- Service Level Agreement (SLA) Assurance
- Customer Insight
- Customer Experience Analysis and
- Service & Network Health.

If budgets were endless, support infrastructures infinite and databases unlimited, there would be many ways to address each of these core business needs. The reality is that CSPs must





become smarter at working within existing infrastructure to accommodate rapid growth and to cost effectively address these key factors of business change.

We believe there is a 5-point solution that leverages network-, control- and user-plane data to deliver an affordable, incremental, focused, and more effective way to assure the customer experience.

Radar focuses on monitoring the customer experience as close to the edge device as possible, either on the device (eg. terminal resident agent) or at the last point of service provider infrastructure (e.g. residential gateway). Customer call and session summary data indicating the quality of sessions with key quality indicators such as duration, throughput, data loss, and latency are collected across a broad number of customers. In addition, session details are transmitted, including cell sites used per call, network identity, and other equipment details. This provides the support staff with real-time visualisation and insight into the behaviour and experience ACROSS the entire customer base.

Spotlight provides a real-time interactive view of the customer experience. It permits the operations or customer service staff to initiate session analysis and tracing functions to evaluate the performance of each individual customer's current or recent service session or connection. In the case of a broadband wireless customer, the staff can initiate live sessions to evaluate current session performance and review analysis information on recent sessions.

Forensics looks into the control-plane and collects the usage details and the service utilisation transactions of individual customers or groups from probe or CDR data. The data is filtered and aggregated to perform more detailed customer experience analysis. This aggregated view can be further grouped and Key Quality Indicators (KQIs) analysed to provide a statistical view of customers' individual or group experiences based on the service types, cause codes, location, time of error, and behaviours. KQIs may include specific cause codes within the usage data such as congestion, service unavailable, network out of order, access failures, end user failure, radio availability, handover success, uplink/downlink strength, etc. Forensic data is more detailed and broader with both more specific measurements and longer historical visibility. The usual sources include probes and billing systems; however, other data sources can be utilised.

Triage applies service-impact correlation and root-cause determination to the customer experience analysis. It correlates Radar,

Function	Benefit	Trade-off
Radar and Spotlight (user plane)	Lower costs to deploy and broad view Increased customer intimacy Rapid issue understanding	<ul style="list-style-type: none"> • Less detailed KPIs • End customer perception of terminal resident software • Requires terminal resident agents
Triage (network plane)	Shorter MTTR Efficient Tier 1-2-3 transition	<ul style="list-style-type: none"> • FM and PM systems must deliver timely and accurate information
Forensics (control-plane)	Analytics Root cause analysis	<ul style="list-style-type: none"> • High cost for pervasive monitoring
Retain	Increased customer satisfaction Decreased penalties	<ul style="list-style-type: none"> • none

Spotlight, or other customer experience results with the service and network impact. Support staff can then drill down from a customer-impacting problem to the related root cause events and KPI exceptions on specific resources. Actions can then be prioritised based upon the severity. Finally, associated service and network conditions can be conveyed to the customer support groups, improving customer interaction and reducing call support times.

Retain ties the experience management functions to commitments made by the service provider to the customer. It allows automatic association of identified customer service degradation events from network, service, and customer experience analysis to current service level agreements. The real-time visibility of key customer group impacts or degradations allows support staff to prioritise corrective actions or customer retention procedures before the customer is significantly impacted or service penalties are triggered.

Tangible business results noted to date for Wireless Data, Enterprise Business and Residential broadband services using the above approach are:

- 90% reduction in root cause analysis time – 3 hours to 15 minutes
- 15-25x reduction in time to implement CSA for new service deployments – to hours/days from weeks/months.
- 80% reduction in customer experience deployment costs
- 40% reduction in support staff training costs

Utilizing this unique approach to Customer Service Assurance, CSPs can maximise efficiency and decrease costs as they gain increased visibility into their customer base. Only when a Service provider can ensure real customer service assurance can they then accomplish broader Customer Experience Management.

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