STRIKING THE RIGHT BALANCE BETWEEN CUSTOMER EXPECTATIONS AND BUSINESS NEEDS

An integrated service assurance framework for operational excellence
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Reflecting the importance of customer experience, Communication Service Provider (CSP) strategies focus on customer centricity, as opposed to the network and IT-centric approach adopted in the past. However, due to the lack of appropriate customer experience monitoring and improvement solutions, there is a huge gap between the Quality of Service (QoS) delivered and the actual Quality of Experience (QoE). While trying to improve QoS and QoE, CSPs also must reduce the cost of operations due to declining margins and a squeeze on budgets availability for investment in new technologies and services.

In this paper, we explore the various challenges faced by CSPs and the maturity of their service assurance models. This paper proposes an integrated service assurance solution based on best practices and best-in-class technology that aims to deliver two key benefits to service operations:

- Operational expense (OPEX) reduction
- Customer experience enhancement

The paper also identifies gaps in service assurance and provides a roadmap to improve service assurance maturity.

1. Introduction

Due to rapid digitization and a weak macro-economic environment in the past few years, the communication and media industries have been under tremendous pressure to transform their IT and networks and reduce operational costs. In addition, competition from over-the-top (OTT) players and declining voice revenues are forcing CSPs to focus on service innovation and customer experience improvement to drive topline growth. CSPs are performing a delicate balancing act, they must identify solutions that can help them simultaneously reduce OPEX and improve QoE.

Looking to enhance operational intelligence, improve quality of services, and build predictability in operations, many CSPs have embarked on customer experience management and OPEX reduction initiatives. However, they have pursued these two agendas in isolation.

According to a study by The ConsumerLab and Consulting about 40% of CSP customer churn is related to service quality, support and billing issues. This means that a culture of customer centricity built into operations should be the true measure of operational excellence for a CSP. And customer-perceived quality of experience in delivery of services is the main component defining customer experience. Ideally, operations should ensure both consistency in delivery of complex...
services and scalability to meet the demands of a growing number of services. However, a holistic operational excellence framework across the organization spanning the entire service life cycle is missing.

In addition, CSPs have to deal with many issues that complicate service assurance maturity:

1. Complexity in CSP operations due to convergence of service lines
2. Heterogeneous environments with multiple IT and network vendors
3. Complex processes and disparate platforms to be managed in the business process chain
4. Skill management to keep pace with new technologies and newly-introduced services
5. Legacy systems leading to IT or network failures that cause service outages and negatively impact customer experience

To mitigate these challenges and minimize the cost of operations without compromising operational excellence, new approaches and methods such as automation, process optimization, tool rationalization and skill rationalization are being widely adopted.

The following sections describe these challenges in detail and define an approach to improve service assurance maturity.

2. Challenges in Service Assurance

Service assurance must link service delivery to customer experience. To improve service assurance CSPs have invested in people, products, partners and processes to address areas of fault management, performance management, and service management. However this hasn’t been enough to deliver operational excellence that improves cost efficiency and customer experience management. Some of the key challenges that are preventing CSPs from attaining the desired level of service assurance maturity are discussed in the ensuing sections.

2.1. Inability to assess the service assurance maturity

One cannot improve what one cannot measure. Today, CSPs lack the ability to measure their service assurance maturity levels and are struggling to establish a quantifiable link between service operations and customer experience. A one-dimensional approach to either improve processes or introduce new tools will not significantly improve service delivery.

2.2. Challenges in scaling up operations to the increasing variety of services

In the hyper-competitive telecom market, CSPs continuously need to introduce new services, features and technologies. These additional services strain existing operations in terms of availability of resources, skill levels of people, training requirements, and efficient management of resources and knowledge. Inability to scale up operations due to margin pressures can lead to multiple issues like high-skilled people resolving low-end repetitive issues, people dependencies, or high effort requirement due to lack of training and organization.

2.3. Complexity and lack of synchronization in IT systems and network

CSPs have to deal with disparate systems, heterogeneous environments from multiple vendors both in IT and networks, and dependent systems running across various operating systems and platforms. This contributes to high systems management costs and additional complexity in system interactions. For instance, when management makes changes to a product plan, the change may not immediately reflect on the order management or CRM systems due to interoperability issues. A customer on the operator portal may continue to see the old product plan and later face bill shock.

This lack of synchronization also prevents the CSP from gaining business intelligence from the customer usage data that exists in the carrier network elements and switches.

2.4. Inability to pin point the root cause of the problems

Lack of agility in problem identification to create a ‘First Time Right’ solution is a key challenge that leads to many Service Level Agreement (SLA) violations. For better issue resolution it is important to understand event triggers in the business context, nail down the root cause, and take corrective steps. For example, activation of a new smart phone could fail if the automated credit checks are not able to handle the sudden spike in traffic. An event can also trigger multiple events across the business process which could delay the root cause analysis.

2.5. Inadequate operational intelligence

As noted above, disparate systems prevent CSPs from using customer data to gain business insights and operational intelligence to predict issues. As a result they are more reactive than proactive which results in customer churn and high operational expenditure. In addition, most CSPs lack tools and technologies that can integrate social media with their business intelligence systems to provide a real time view of the customer experience.

2.6. Lack of an end-to-end view of services delivered

The inability to get an end-to-end service view hinders the business from gauging the impact of resource failure on business processes or services and affects priority allocation to important issues. For example, a profitable enterprise customer who cannot easily add new services due to faults in IT systems or the network can negatively impact business if corrective steps are not taken in time.
3. Evaluating Service Assurance Maturity

To overcome the challenges discussed in the previous section CSPs must evaluate the current state of their service assurance maturity across four key areas: processes, people, products and partners (see figure 1).

3.1. Processes

Adequate and optimal processes are a key to customer-centric operations. The process assessment study should include details on how the current faults and performance issues are managed and routed to the trouble-ticketing system, as well as how the trouble-ticketing system handles the ticket routing and establishes the workflow to ensure the failure recovery happens in compliance with SLAs. As part of the process study, it is important to define and deploy the SLAs as per key processes.

These operational metrics will help improve the customer experience by providing insights on the customer perceived quality of service and the key performance indicators (KPIs) defined for a variety of systems and processes. In addition, the KPIs should be linked to key quality indicators (KQIs) and to provide meaningful insight on the customer experience impact. It is important to have the processes aligned to standard industry eTOM and ITIL frameworks.

3.2. Products

Products and tools like the monitoring engine and operations trouble ticketing system must be optimally utilized. If multiple vendors are involved in operations management and use their own set of products or tools to manage operations, it may create a redundancy in product use over time. This in turn increases overall operations costs associated with product licenses and operations management. As a part of the process study, it is important to audit the products and look for opportunities to consolidate and rationalize them for greater operational efficiency and reduced cost.

3.3. Partners

CSPs, especially in a multi-vendor scenario, need to have strong governance in service operations. As part of the process study, it is important to understand the governance defined in operations and whether there is clear RACI matrix defined with clarity in roles and responsibilities. The partner performance in operations must be measured in terms of OPEX and customer experience. Another key area of focus is to understand knowledge management and knowledge sharing between the partner and the CSP to avoid knowledge transfer issues.

3.4. People

As part of the assessment it is important to understand the correlation between operational expenditure and work-skill mapping. For instance, it is inefficient to have highly-skilled workers performing low-end repetitive tasks.

To appropriately assess the performance across the four areas mentioned above, service providers require a service assurance maturity assessment tool.

4. Service Assurance Maturity Assessment Tool

As a first step, CSPs should evaluate the current state of service assurance maturity in their operations based on levers of operational expenditure and customer experience management. A service assurance maturity tool (see figure 2) can help CSPs analyze the maturity of service operations on the four parameters explained above and identify improvement actions. The four levels of maturity are explained in detail.

<table>
<thead>
<tr>
<th>Customer Experience</th>
<th>Operating Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low CE, Low OPEX</td>
<td>1</td>
</tr>
<tr>
<td>Low CE, High OPEX</td>
<td>2</td>
</tr>
<tr>
<td>High CE, Low OPEX</td>
<td>3</td>
</tr>
<tr>
<td>High CE, High OPEX</td>
<td>4</td>
</tr>
</tbody>
</table>

Figure 2: Service Assurance Maturity Assessment Tool for CSPs, Source: Wipro Technologies
Based on the assessment from the service assurance maturity tool, a solution roadmap is designed for CSPs and implemented to address the areas of focus in service operations.

<table>
<thead>
<tr>
<th>Level of Maturity</th>
<th>Assessment</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Customer Experience and High OPEX</td>
<td>• In this level the customer experience score is good with regards to quality of services, but operational costs are not well controlled.</td>
<td>• In this scenario, CSPs will need components such as process engines and automation engines to create more operational efficiencies. This scenario also requires a greater focus on optimizing processes, products and skill management.</td>
</tr>
<tr>
<td>Low Customer Experience and High OPEX</td>
<td>• In this level there are many gaps in operational performance and operational intelligence. Customer churn due to poor quality of service is likely, negatively impacting top line performance.</td>
<td>• In this scenario, it is important to focus on service operations across all areas of people, processes, products, partners and further study the voice of customer and customer perception.</td>
</tr>
<tr>
<td>Low Customer Experience and Low OPEX</td>
<td>• In this level the OPEX is controlled efficiently, but customer experience requires improvement, likely due to a poor quality of service.</td>
<td>• In this scenario, CSPs will need components such as an Insight engine to deliver better operational intelligence. The Insight engine will provide predictive analytics to showcase the real time impact on customer experience and further bridge QoS and QoE.</td>
</tr>
<tr>
<td>High Customer Experience and Low OPEX</td>
<td>• This is the ideal service assurance state. Service operations are run efficiently, without compromising the customer experience.</td>
<td>• In this scenario, operations are linked to customer experience. The CSPs could look for continuous improvements and sustenance.</td>
</tr>
</tbody>
</table>

5. Recommendations for CSPs

CSPs require adequate tools and systems to manage operations and measure the service-level maturity across IT and networks (refer Wipro obServe solution here). The diagram below (figure 3) showcases the functional components required to achieve an optimal state of service assurance maturity.

Figure 3: Functional Architecture for Proactive Service Assurance, Source: Wipro Technologies
5.1. Adopt a service assurance maturity assessment tool

CSPs should develop a service assurance maturity assessment tool to continuously monitor the level of maturity of their operations along the dimensions of operational expenditure and customer experience. Adopting a comprehensive service assurance maturity tool will provide CSPs with insights into the level of maturity with respect to people, processes, products, and partnerships. Based on the continuous assessment, CSPs will be able to devise appropriate strategies to achieve the desired state and build an enterprise architecture that brings synchronization across systems and improved operational efficiencies.

5.2. Develop a robust process and automation engine to reduce operational expenditure

CSPs need a process engine and an automation engine that will help enforce operational discipline and reduce operational efforts to ensure enhanced co-ordination between IT and network teams. CSPs require Standard Operating Procedures (SOP) based on best practices for various business processes cutting across a variety of services. The SOPs need to be standardized and the failure recovery details need to be detailed and complete. This knowledge should be retained as part of the knowledge management repository and should help operators speed up fault resolution. It is important to have a methodology to map the business processes to technology processes and apply failure modes and effects analysis (FMEA) to help pinpoint the root cause. The SOP should feed into the process engine which will orchestrate the failure recovery. The automation engine will execute actions on servers, applications or the network.

5.3. Build an insight engine to generate operational intelligence

In the performance engine, CSPs should capture performance data for resources across IT systems and the network. The data coming from different resources such as the network or the IT infrastructure should be collected, enriched and harmonized into a unified data model and stored in a data warehouse. The warehouse is a master database of all KPI/KQI data. The insight engine will utilize this database to analyze data, correlate historical data, process multiple data streams in near real-time and apply pre-defined patterns to raise events. These insights would then be consumed by different groups to provide real time action or pass it on to the visualization layer to provide a real-time view. This will reduce churn due to poor quality of services and help business prioritize the services for the most profitable and loyal customers.

5.4. Develop end-to-end visualization capabilities

CSPs should develop a rich visualization layer which will provide end-to-end service views and service monitoring. It is important to have a customer-centric service modeling, mapping the resources of IT systems and the network to customer facing services. The visualization tools should have a multi-view, interactive dashboard with detailed impact analysis, real time alerts and service quality indicators and perceived customer experience measurement. The service views and dashboards will help operations and business staff take proactive corrective steps in service assurance.

6. Implementation Strategy

In this section we discuss the implementation approach that can help CSPs move to a more advanced next level of service assurance maturity. It is important for CSPs to evaluate their long-term business goals and objectives before they embark on a service assurance improvement journey. CSPs should adopt a phased implementation approach measuring and analysing their priorities at each step. The implementation activities can be broadly classified into two steps (see figure 4).

Figure 4: Two step solution approach for service assurance implementation, Source: Wipro Technologies
To thrive in the hyper-competitive telecommunications market, CSPs need to replace their traditional network or IT centric approach in operations with a customer-centric approach. In addition, margin pressures necessitate operational excellence. Most CSPs have already realized this and they have initiated a number of service assurance transformation initiatives aimed at reducing OPEX and QoS improvement, however, mostly in isolation. Consequently, they have not been able to strike the right balance between OPEX and QoE. If the focus is only OPEX then customer experience gets ignored and vice versa.

CSPs must adopt a holistic solution approach for service assurance that addresses both the OPEX and QoE levers. For proactive service assurance CSPs also require an end-to-end service view on operations cutting across business processes, infrastructure, networks and applications. The key to this lies in developing predictive analytics capabilities and operational intelligence that will enable CSPs to understand the real-time impact of operations on customer experience and predict problems before they actually occur. In addition, to achieve and sustain a high level of service assurance, CSPs need to continuously monitor their service operations, embrace greater automation and adopt a robust failure recovery approach.

### 6.1. Step 1 - Identification and analysis

In this step, CSPs should identify the gaps between the current state and the desired state, with respect to processes, people, products and partners. Improvement initiatives often focus on an area such as process optimization, when the real issue is related to products or people. Once the gaps are identified and analysed, CSPs need to define a clear roadmap to achieve the next level of maturity.

### 6.2. Step 2 - Implement and improve

Based on the assessment from the previous step CSPs should define initiatives that would yield the best results. The solution can be implemented on various development models of V-Process model, iterative process model or agile model depending upon the CSP’s existing systems and priorities. However, Wipro suggests having a phased implementation approach to the solution. The diagram (figure 5) provides a reference framework to the phases in the implementation of the solution.

### 7. Conclusion

To thrive in the hyper-competitive telecommunications market, CSPs need to replace their traditional network or IT centric approach in operations with a customer-centric approach. In addition, margin pressures necessitate operational excellence. Most CSPs have already realized this and they have initiated a number of service assurance transformation initiatives aimed at reducing OPEX and QoS improvement, however, mostly in isolation. Consequently, they have not been able to strike the right balance between OPEX and QoE. If the focus is only OPEX then customer experience gets ignored and vice versa.

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