Automating service assurance using industry standards
How ServiceNow leverages TM Forum alarm management API to deliver proactive service experiences
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Rising expectations for proactive service experiences

Digital experience expectations have drastically evolved over the past few years.

It’s now standard practice for ecommerce companies to proactively notify customers if there are service issues with orders—such as shipping delays—and how the issues will be resolved. Those same consumer-like service experiences are expected of communications service providers (CSPs), and they are under significant pressure to deliver or be pushed even further down the value chain.

With cost pressures and growing expectations from customers, Communications Service Providers (CSPs) need to continuously improve the quality of service (QoS) on their networks.

In this new era of digital experience, CSPs need to proactively identify service issues before or when they happen by predicting certain patterns on the network and proactively finding a remediation path using automation or machine learning (ML) and artificial intelligence (AI). Keeping humans in the loop throughout the entire process is key—care and network teams need to understand what’s happening on the network in order to support resolution, and customers need proactive communication about the impact and resolution process.

This type of proactive service experience helps CSPs make big strides towards improving net promoter scores (NPS) and customer satisfaction scores (CSAT).

It’s time to redefine service assurance

If you look under the hood in any network operations center (NOC), you will likely find an assortment of network management tools that have been installed for years, if not decades. Before next-gen services were born, these tools worked well for fault and performance management, as well as root cause analysis, within specific domains.

In today’s competitive landscape—with new assets entering the mix and with increasingly complex networks—this approach no longer works for a myriad of reasons, but primarily because siloed legacy systems cannot deliver end-to-end visibility of all elements across the customer, employee, and partner ecosystem.

With 5G and Software-Defined Networking (SDN) starting to take center stage, there is a need for a more modernized, unified approach to service assurance. One that delivers end-to-end visibility of the entire telecom ecosystem, including physical, logical, and virtual layers.

Yet CSPs still struggle to bring the old and new worlds of network resources together in order to deliver proactive experiences and automate service assurance.
Five reasons why proactive service experience is difficult to achieve

The ecosystem of a CSP is massive and will only continue to grow in complexity as networks evolve. ServiceNow has observed five key issues why CSPs struggle to deliver proactive experiences today.

1. **Inability to map resource to customer**
   CSPs struggle to map what is happening on the network to the impacted customer because they do not have the customer or service context. As a result, the CSP cannot notify the affected customer(s).

2. **Heterogenous networks**
   Multiple different heterogeneous networks are becoming more common. The complexity of these networks and topology makes the resource mapping even more challenging.

3. **Myriad of monitoring tools**
   Heterogenous networks come with a set of different monitoring tools that exist in various network environments, making it difficult for CSPs to correlate and link events together.

4. **Lack of orchestration and workflow**
   Different organizations and teams need to work seamlessly to resolve an incident. With so many different network monitoring tools, it becomes increasingly difficult to enable orchestration across all the different tools and different organizations to provide a seamless experience.

5. **Growing complex ecosystem**
   The introduction of 5G and SDN will amplify challenges, especially when it comes to network slicing. Identifying how service level agreements (SLAs) are impacted, who the impacted customers are, how to notify them, and how to remediate those services and impacted resources all pose significant challenges as networks evolve.
Four key elements to make automated service assurance a reality

Network teams know all too well that when an event comes in, it causes a flurry of activity to happen across different tools and different domains. Network teams need the ability to provide cross-domain correlation, root cause analysis, and de-duplication to identify the root cause of the particular network event. They also need to determine dependency mapping of the network and proactively create an incident on the network, identifying which resource needs to be resolved. Only then can they kick off a workflow to notify impacted customers and begin the remediation process.

In this scenario, achieving automated service assurance means CSPs need the ability to prioritize cases and rank remediation based on service level agreements (SLAs) or operational level agreements (OLAs), which requires four key elements:

Map the network
A CSP likely has multiple heterogeneous network platforms, inventory, and discovery systems that exist in their environment. ServiceNow serves as the connective tissue for mapping the entire network; the fundamental core for enabling proactive notification and resolution paths.

Monitor and detect
Once the network is mapped, a CSP can now monitor and detect the issues happening and perform root case analysis for those issues.

Provide early warning
Information is then taken and used to proactively notify both internal stakeholders and customers being impacted, creating a notification via an incident to ensure the appropriate remediation path.

Drive resolution
With early warnings provided, resolution can now be initiated. Resolutions should be recorded and should incorporate AI and ML algorithms running underneath the resolution process in order to learn from those resolution paths, especially if it’s human-driven. Resolution can further be automated as confidence builds.

Want to learn more?
Watch the on-demand webinar:
Sounding the alarm for proactive experiences
TM Forum Global Architecture Framework webinar; November 2020
Using TM Forum standards to enable proactive experiences

Achieving automated service assurance starts by standardizing network monitoring data, which is why TM Forum Open API 642 (TMF642 API) plays such a critical role. ServiceNow leverages TMF642 API for alarm management, which provides a seamless standards-based integration to any network monitoring platform in order to leverage data in a standardized fashion.

Automating service assurance with ServiceNow

With ServiceNow, CSPs can leverage and enhance existing network planning and inventory tools by consolidating all network data into the ServiceNow service-aware configuration management database (CMDB).

Think of the ServiceNow CMDB as the service contextualization layer that brings together data from network planning, inventory, and discovery tools; a relationship model that provides information like resources used, services running on top of those resources, and the relationship between different network technologies and domains.
ServiceNow also functions in the Service Operations layer, working and integrating with the various tools in the NOC. The business context and instrumentation across a variety of domain-specific network monitoring tools is the key domain where ServiceNow helps increase efficiency in operations for a CSP.

**ServiceNow Service-Aware CMDB**

With a single-pane view, CSPs can now increase productivity while reducing mean time to repair (MTTR). Proactive notifications can now be delivered to the customer via the channel of their choice, improving QoS and reducing SLA and OLA breaches. Further, resolution can be automated using assurance workflows tied to field technicians for increased effectiveness and reduced fulfillment time.

**Think of ServiceNow as the connective tissue that brings together data from the network and layers service context on top.**

*Source: IDC, “Digital network operations: Are you ready for what’s coming?”*
The better way to automate service assurance in telecom

Designed using TMF642 API and ServiceNow’s Telecommunications solution, now CSPs can achieve a more efficient process to automate service assurance.

1. Something happens. Be it a fault or performance degradation, an event is identified by your network monitoring tools.

2. The event gets pushed using TMF642 API.

3. Based on the defined business processes, the event is translated into an alert.

4. The alert references ServiceNow to correlate network and service information, and an incident is created.

5. The incident gets associated to a network team with the correct priorities and urgencies, along with resources being impacted.

6. The incident references back to ServiceNow, identifying which service(s) + customer(s) are correlated to the impacted network resources.

7. A proactive case is created for each individual customer impacted by the service, and the impacted customers are proactively notified via their channel of choice.

Proactive agent

Happy customer
Shifting the paradigm of service operations with ServiceNow

Reimagining service assurance requires CSPs to think out of the box and take bold steps to invest in solutions that have customers, employees, and partners in mind. There is also a significant need to pivot and change the way we think about service operations, from traditional resolution tasks to a paradigm that shifts into service operations.

This shift requires customer-to-service mapping, alignment to TM Forum standards, and automated workflows, all delivered on a single integrated cloud-native platform that breaks down silos and brings customer and network data together, finally.

Conclusion

At ServiceNow, we believe that behind every great experience, is a great workflow. As CSPs begin to reimagine the customer experience to one that proactively informs customers and resolves issues as they occur, it’s critical to connect the customer and agents to operations and the network in a simple and streamlined way. TM Forum’s Open API standards ensures interoperability in the evolving digital ecosystem. As the industry continues to transform, these standards allow CSPs to evolve a component of their architecture without disrupting the entire ecosystem.

Proactive experience is just the tip of the iceberg when it comes to leveraging TM Forum APIs. Adhering to standards and having a consistent mechanism to integrate is a key pillar for digital transformation.

ServiceNow is a proud member of TM Forum.

Award-winning 2020 catalyst project: Outstanding Use of TM Forum Assets

Inform blog: Enabling the ecosystem: The new role of the vendor