VITRIA®

Optimizing Service Assurance with Operational Intelligence

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"Two-thirds of subscribers will stop trying a new service after two failed attempts with that service"
– Mobile Magazine

Executive Overview

The practice of service assurance enables service providers to identify faults and resolve issues to minimize service downtime. This includes policies and processes to pinpoint, diagnose, and resolve service quality degradations or device malfunctions. Studies[1] have shown that two-thirds of subscribers will stop trying a new service after two failed attempts with that service. Therefore, it is increasingly apparent that service assurance tools must be put in place prior to the introduction of a new service, if it is to be successful in the market.

The emerging business landscape has made it clear that service providers must detect potential customer issues and respond quickly enough to avert negative customer experiences. Service providers that manage business events, in real-time, using Operational Intelligence (OI) solutions have the strategic advantages of real-time information and the ability to proactively take action.

The Vitria M$_3$O Operational Intelligence Platform enables service providers to deliver improved services by supplying the required visibility and insight into business operations in a timely manner coupled with the ability to take proactive corrective action before customers are impacted.

Improving Service Assurance with Operational Intelligence: 3 Use Cases

Let us consider the following three use cases of service assurance: network service assurance, customer experience management (CEM), and quality of service (QoS).

Use Case 1: Network Service Assurance
A vital part to assuring network service for a telecommunications company is its ability to quickly and efficiently reduce the number of incidents in its Operational Support System (OSS) for mobile broadband antennae. If the company has a few hundred such OSS systems, then the company's network traffic management team must work rapidly to detect and prevent bottlenecks, down antennae, network overload, CPU consumption, etc. However, the major problem for most telecommunications companies is not the inability to generate such alarms, but ensuring that the alarms for such exceptions are not generated too late, after the exception has occurred, without any forewarning.

It is quite common for network key performance indicator (KPI) reports to be produced and reviewed long after an incident has occurred and the impact been suffered. Real-time reporting granularity, on the other hand, provides much more insight into operations and enables the company to become more proactive. Telecommunications companies must, therefore, monitor real-time events produced in their OSS systems, and deliver critical information regarding the performance and behavior of the OSS network equipment to the proper

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[1] *"Does this make you churn?" Mobile Magazine, January 26, 2006*

personnel. An OI solution monitors real-time events produced in the OSS system, generating critical information regarding the performance and behavior of the OSS system.
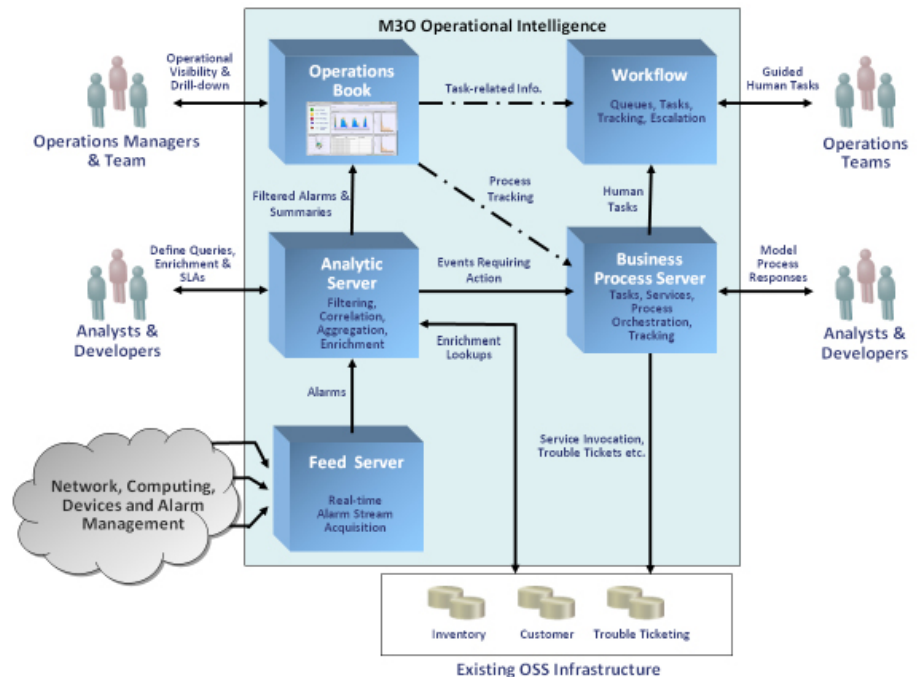

Fig. 1: Operational Intelligence Architecture for Network Service Assurance

Use Case 2: Customer Experience Management

Similarly, electricity providers in competitive, deregulated energy utility markets must focus on delivering an exceptional customer experience to both new and existing customers. If electricity providers want to focus specifically on the customer on-boarding process by tracking KPIs and business conditions at each step of the process, they require full transparency across all business operations. Any service issues (i.e., Exceptions) must be identified early and corrected before the new customer even takes notice.

In order to achieve this goal, electricity providers need to gain greater visibility into their enrollment processes, insight into the status of each process (quickly identifying those processes in jeopardy), and the ability to take immediate corrective action before impacting the customer. Operational Intelligence provides this real-time visibility into such end-to-end enrollment processes, manage the processes as they execute, and adjust the processes as necessary.

Use Case 3: Quality of Service

Cable companies must be able to guarantee a certain level of performance for data flow in order to maintain an acceptable QoS to their customers. Quality of service guarantees are very important if the network capacity is insufficient, especially for real-time streaming multimedia applications, such as voice over IP, online games, and IP-TV, since these often affect the customer at the most critical time. The goals for such cable companies, then, are quite obvious: provide a high-quality and high-performance environment to support customer demands,

without increasing overhead costs.

An Operational Intelligence solution that supports QoS would agree on a traffic contract with the application software and reserve capacity in the network nodes, for example during a session establishment phase. During the session it would monitor the achieved level of performance, for example the data rate and delay, and control scheduling priorities in the network nodes, in real-time. Apart from a noticeable difference in quality, an OI solution has several benefits, including predicting end-to-end delay and packet loss rates, easy deployment with minimal impact to existing systems, and easy verification for compliance.

An integrated Operational Intelligence solution should deliver an intuitive interface

4 Requirements of an Operational Intelligence Solution for Service Assurance

There are four common capabilities that are characteristic of a total OI solution:

1. User Empowerment & Rich Visualization:

In order to gain real value from visualization applications, business users need solutions that look, act, and feel like today's more popular productivity devices, such as PDAs and smart phones. Business users should be able to ask their own questions and receive immediate answers to act upon. A truly rich visualization environment should consist of the following two features: interactive Web 2.0 dashboards and simple business tools.

• **Interactive Web 2.0 Dashboards:** Business users must be able to organize information in a way that makes sense for them and supports their specific needs. Such Web 2.0 dashboards must also enable business users to create views that combine data from multiple sources, including both traditional and non-traditional data sources, such as Google Maps with real-time traffic information and vehicle routing information (from an ERP system).
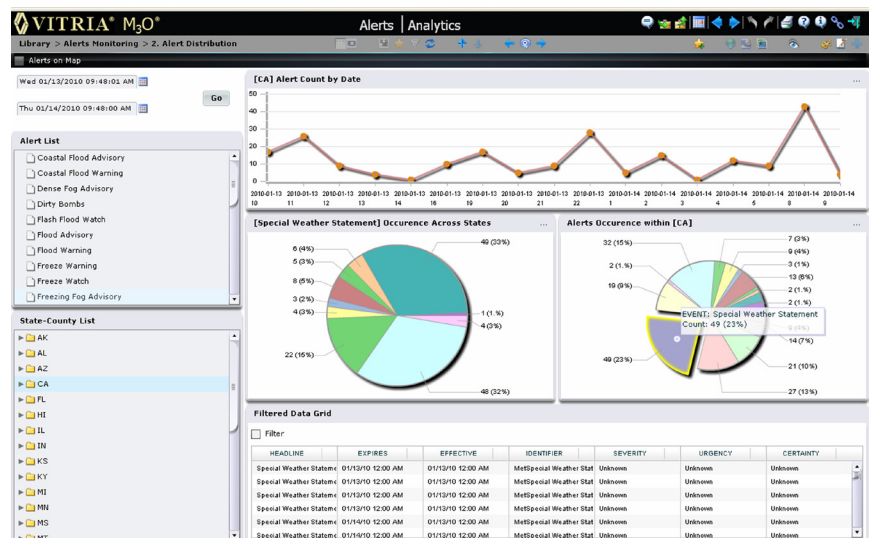

Fig. 2: Example of interactive dashboard with clickable icons

A subscriber's service experience quality can be directly linked to churn

- **Simple Business Tools:** The rich user-interface of an OI solution must enable business users to create new views and correlations with simple, clickable icons. As a result, business users must be able to easily organize and customize dashboards in order to monitor and analyze events and other important metrics, such as KPIs and service level agreements.
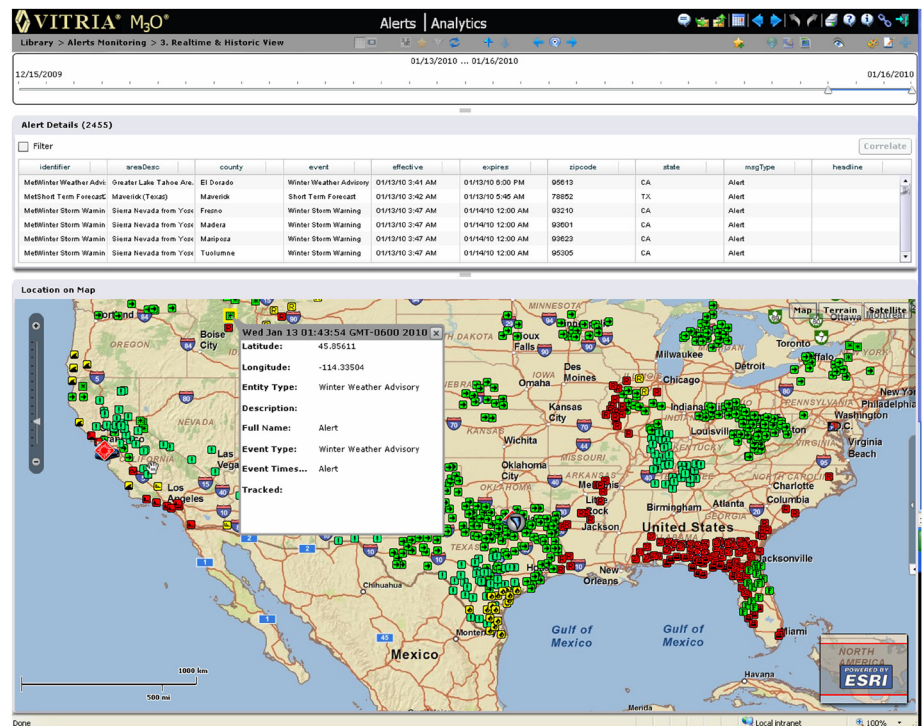

Fig. 3: Example of mash-up data from multiple sources

2. Easy Accessibility to Operational Data (from Multiple Sources):

Social media interactions are emerging as a new type of feed that is placing an unprecedented amount of pressure on businesses to assimilate information and act appropriately. Similarly, RSS feeds that update weather patterns, geopolitical events, and financial markets are also becoming essential sources of information, as are emails, workspaces, and wikis. Without such non-traditional sources of data, it is not possible to have a complete picture of operational performance.

Operational Intelligence goes beyond traditional sources of data to access a vast array of both structured and unstructured data. An OI solution can draw upon such non-traditional data; filter and correlate it with structured, transactional data to create multilayered dashboards; and deliver the results to event management tools.

3. Real-Time Continuous Analytics:

Complex-Event Processing (CEP) engines analyze multiple events over a specific period of time, detecting patterns and making correlations. For example, a CEP engine can detect suspicious electricity usage by monitoring metering activity, as it occurs. A CEP engine can perform trending analysis over streams of events and correlate a stream with stored and/or historical data, such as metering activity with customer information from a CRM system and historical usage patterns.

4. Root-cause Analysis to Facilitate Corrective Action:

Whenever an event occurs, it triggers a chain reaction that has consequences for processes throughout operational systems. Business users need to know which event triggered what exception and what sort of impact it will have later down the line. For example, a new version of a mobile phone is released and selling in record numbers, but the activations are failing because automated credit checks cannot keep-up with the high traffic rates. A corrective action is required to change the activation process by temporarily allocating resources to handle the spike in demand. Hence, in order to get to the root-cause of an event, business users must be able to drill-down, in context. Drilling-down into the process determines what went wrong and where it went wrong, to take the most appropriate course of action.

With the four capabilities of OI for service assurance outlined above, business users now have one solution that will easily achieve:

1. Visibility into real-time customer experiences by combining service performance with customer information.
2. Insight into actual and expected service performance through real-time analytics.
3. The ability take to action in the form of automated responses, in order to resolve problems before they impact the customer.

Conclusion: Assuring Service Delivery with Operational Intelligence

The emerging business landscape has definitely made it critical that companies detect and respond to potential issues before they affect the overall customer experience. There are many drivers for service assurance adoption, from network service assurance to CEM to QoS. A subscriber's service experience quality can be directly linked to churn. Therefore, maintaining exceptional service quality levels is key to retaining customers.

It is a service provider's ability to ensure an outstanding level of service delivery that will have the greatest impact on revenue

Returning to the three use cases used to define the problem, each of these three companies had ongoing service assurance issues and needed to proactively identify and remediate problems before impacting the customer. Thus, each of the three companies required an OI solution.

The Vitria M$_3$O Operational Intelligence Platform fosters such productivity and collaboration by delivering a model-driven, fully-integrated OI platform that optimizes service assurance. Additionally, Vitria's tightly integrated M$_3$O Operational Intelligence Platform will enable:

1. Increased business agility.
2. Improved customer satisfaction and retention.
3. Instant, policy-driven actions.
4. Continuous monitoring and analysis of information in real-time.
5. Improved compliance management and reduced costs.

Available in the Cloud or on-premise, deployment of the Vitria M$_3$O Operational Intelligence Platform is non-intrusive, with easy integration to existing business applications and infrastructure. This fully-integrated platform enables more rapid time to value than alternative point solutions.

To take the next step to optimizing your service assurance with OI, request a solution demo at: www.vitria.com.

About Vitria

Vitria Technology, Inc. provides the industry's leading Operational Intelligence platform, empowering partners and customers alike to develop innovative Operational Intelligence solutions to analyze business activities in the proper context and take real-time action. The result is faster, better decision-making. With a rich heritage as a technology pioneer, Vitria's award-winning process integration solutions provide the backbone for many Global 2000 companies' mission-critical business processes. Vitria has customers in North America, South America, Europe, Asia, and Australia.

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