



Managing the Customer Experience Migrates to Mediation

Next generation communications networks are rapidly proliferating, creating an urgent need for mediation systems that address OSS-related Use Cases. At the same time, the need for CSP's to understand their subscriber's experience is increasing, regardless of the technology or network their services are delivered over. At the intersection of these two trends, mediation is being transformed into a bedrock for managing customer satisfaction and reducing churn.

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As next generation communications networks proliferate, the need for mediation systems to address OSS-related Use Cases is becoming more common than the requirement to meet traditional BSS-related requirements like processing billing data. With more and more individualized and complex service packages prevalent in today's market, the need for CSP's to understand their subscriber's experience is increasing. The view they need must be delivered regardless of the technology or network the service is delivered over, and it serves as a means of managing customer satisfaction and by extension reducing churn.

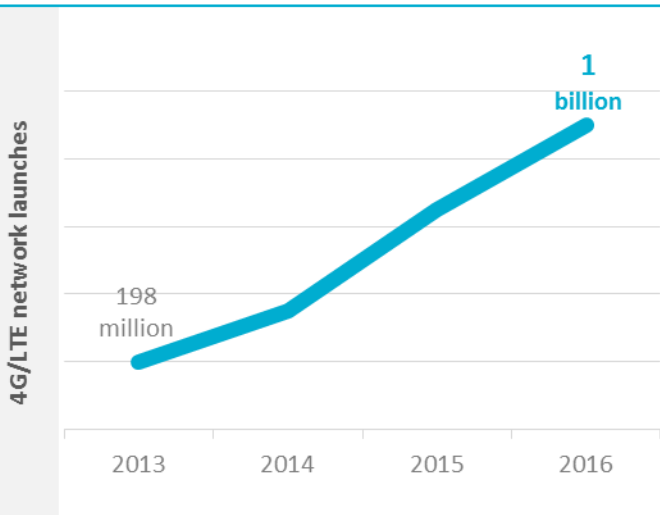
The anticipated explosion in 4G/LTE network launches in 2013 will accelerate this shift. LTE subscribers are projected to reach 198.1 million according to an IHS iSuppli Wireless Communications Special Report. By 2016, LTE will have more than 1 billion users, equivalent to a five-year compound annual growth rate of 139 percent. But it is also, even primarily driven by the fact that competition among service providers is no longer exclusively based on price. Quality of Service, Service Differentiation and other parameters are now emergent as keys to winning and retaining market share.

In fact, the growing proliferation of data that accompanies the rise of LTE will see even more OSS-related use cases come into play. This is the by-product of modern, "all data" networks in which separated data pipes are set up and individually monitored. When network activity occurs, each pipe creates its own usage records and the IMS platform providing end user communication services on top of these pipes, does the same. (This trend of DPI Monitoring creates a further flow of usage records including details previously not recorded. It is further adding to this data explosion.)

Given the greater number of network cells in operation today the volume of OSS-related event activity is increasing exponentially with more handovers and a higher risk of failure across the board. This trend is also fueled by longer subscriber sessions, as data is "always on" and the concept of 'disconnect' has more or less disappeared. Furthermore, LTE network design adds challenges of its own, introducing a flatter network topology with more intelligence in base-stations, and as a result causing the number of points from which to collect quality records to increase by a significant multiple.

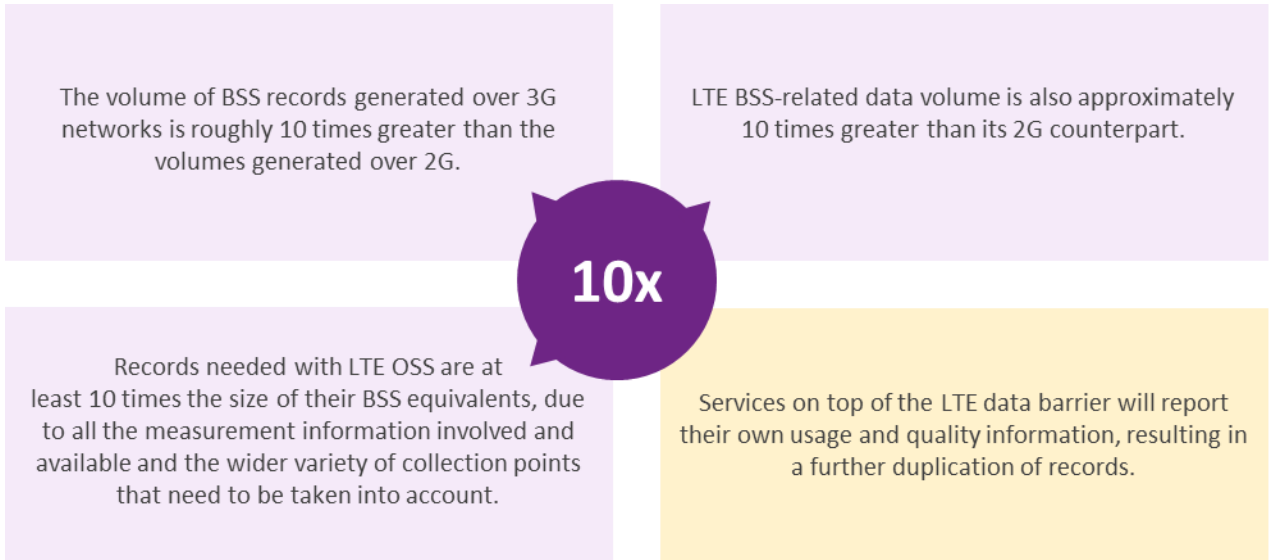
Put simply, in the context of today's industry, there is a significant data management challenge that results in mediation growing significantly in importance. And as a result, mediation is now the data integration hub from which the customer experience will be managed and secured.

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Increased volumes demand extreme scaling

As the role of mediation changes to respond to network conditions, so the demands placed on mediation systems increase. Even a cursory examination of the nature of network evolution makes this clear. For example:



Overlay this on global market activity and the size of the challenge comes into focus. According to the Cisco® Visual Networking Index (VNI) Global Mobile Data Traffic Forecast for 2011 to 2016, worldwide mobile data traffic will increase 18-fold over the next five years, reaching 10.8 exabytes per month -- or an annual run rate of 130 exabytes -- by 2016. The knock-on impact of this growth on mediation is significant. As new service bundles proliferate, new devices that have the potential to quickly and significantly change behaviors appear, and multiple activities take place over potentially multiple pipes, usage records are likely to grow in lock-step.

These and other realities mean that “traditional” approaches to and applications of mediation functionality simply won’t accommodate the opportunity network evolution demands and provides to the Service Provider. Today, the ability to meet extreme scaling requirements has to be considered

“table stakes” for mediation to play its correct role in modern BSS infrastructures. The era of mediation as acting predominantly or even only as an antecedent to billing and rating is over.

While this truth is partly expedient; fuelled by the simple need to access an IT system that can manage the sheer tidal wave of data and direct it to its correct destination, the reality is that it also falls to mediation to make that data valuable. Increasingly, that means valuable for billing; for network assurance; for service assurance, and for other Use Cases too, some that may even, as yet, be unforeseen. Customer Experience is managed at the intersection of all of them.

MediationZone from DigitalRoute is uniquely placed among mediation products to address these requirements, enabling the required processing to take place in real-time or batch environments, and in the process merging the old worlds and the new into one consolidated end-to-end subscriber focused view.

OSS is mediation's new challenge – Mediation is OSS's new solution, tackling the volume challenge

The reason for mediation's growing importance within OSS goes beyond the simple fact of increasing data volumes. OSS is by definition a network-centric function, and it is now within the network itself, rather than the BSS that sits on top of it, that the key to commercial success increasingly lies. The immediate reason this is the case is well known; communications services have been commoditized and the barriers to exit between service providers are low.

Therefore, in a world of complex and diverse offers, network experience has become the key to customer satisfaction; conversely, service-related problems along with a lack of pro-active retention strategies (which are founded on data analysis) are the leading causes of churn. As a result, Service Assurance is key to commercial success. But achieving it is not easy.

CSPs require real-time visibility into the performance of their infrastructures but given multi-vendor multi-service topologies, achieving this is not straightforward.

Session level insights are necessary to understand the customer experience, but constantly changing commercial offers and sheer service complexity makes this difficult. Root cause analysis of issues on both Service and Subscriber levels are key components of satisfaction, but being able to deliver in this area requires the pre-processing of huge volumes of data from disparate sources (including the avoidance of storing thousands of simple events when it is not necessary to do so). The Correlation of several records belonging to the same session (for instance after a handover), but also correlating Radio Measurements reports from network elements to the call setup records is pre-requisite but highly challenging. Meeting all these requirements is the natural domain of MediationZone.

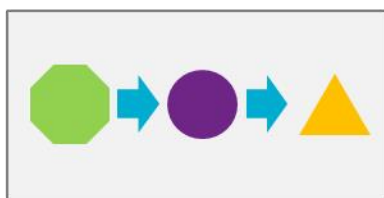
Why mediation for Service Assurance?

The fact is, Service Assurance demands specific solution characteristics that makes its use cases inherently well-matched to MediationZone. These include:



Extreme data volumes

The ability to acquire and process extreme volumes of data records from an explosive number of individual sources.



Data correlation

The ability to correlate data from a broad array of different network segments in real-time




Present data

The ability to present data in a way that quickly enables complex queries and drill-down analysis.



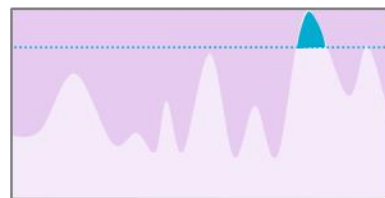
Online and Offline

The Real-time (online), near Real-time, and offline integration of data from those aforementioned multiple sources on a single processing platform.



Diverse data types

The ability to manage diverse data types via both downstream and upstream interfaces.



Multi-level thresholds

The opportunity to count with dynamically created buckets and initiate notification/action on multi-level thresholds

MediationZone’s heritage demonstrates strong data integration and processing/ transformation capabilities in both the active and passive domains. The product is already proven in a broad range of Use Cases across a variety of different functions ranging from traditional billing mediation to Policy and Charging Control functionality.

MediationZone has an unrivalled reputation in the Communications industry where it has been deployed over 400 times including by some of the world’s largest service providers as a data integration platform whose processing capabilities provide high-volume preprocessing of critical data.

The product can collect any network/probe generated event regardless of volumes and output a much smaller set of enriched and valuable data to a visualization layer.

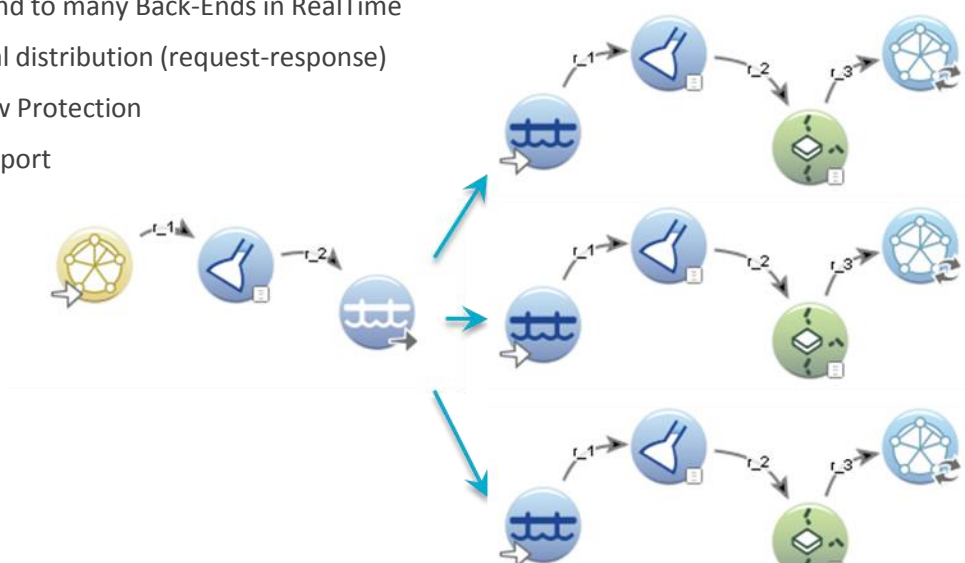
The product is optimized to collect data from any source, integrate with the necessary OSS probes, and manage format conversion to full signaling event handling and state maintenance. Data can be sourced from both radio and/or core in order to provide downstream systems with a complete view. Massive access network data volumes are matched up with key information drawn from the core network. The main tasks MediationZone handles include collection, decoding, sorting, and aggregation.

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Service Assurance Mediation – Scalability

Description

- In-memory and cross blade transparent handover as one transaction chain
- Load Balancing traffic from one to many execution instances
 - One Front-End to many Back-Ends in RealTime
 - Bi-directional distribution (request-response)
- Includes Overflow Protection
- Broadcasting Support



Benefits:

- ➔ Scaling for Routing including Failover Scenarios
- ➔ End to end transaction transparency

MediationZone: Extreme Scaling for Customer Experience

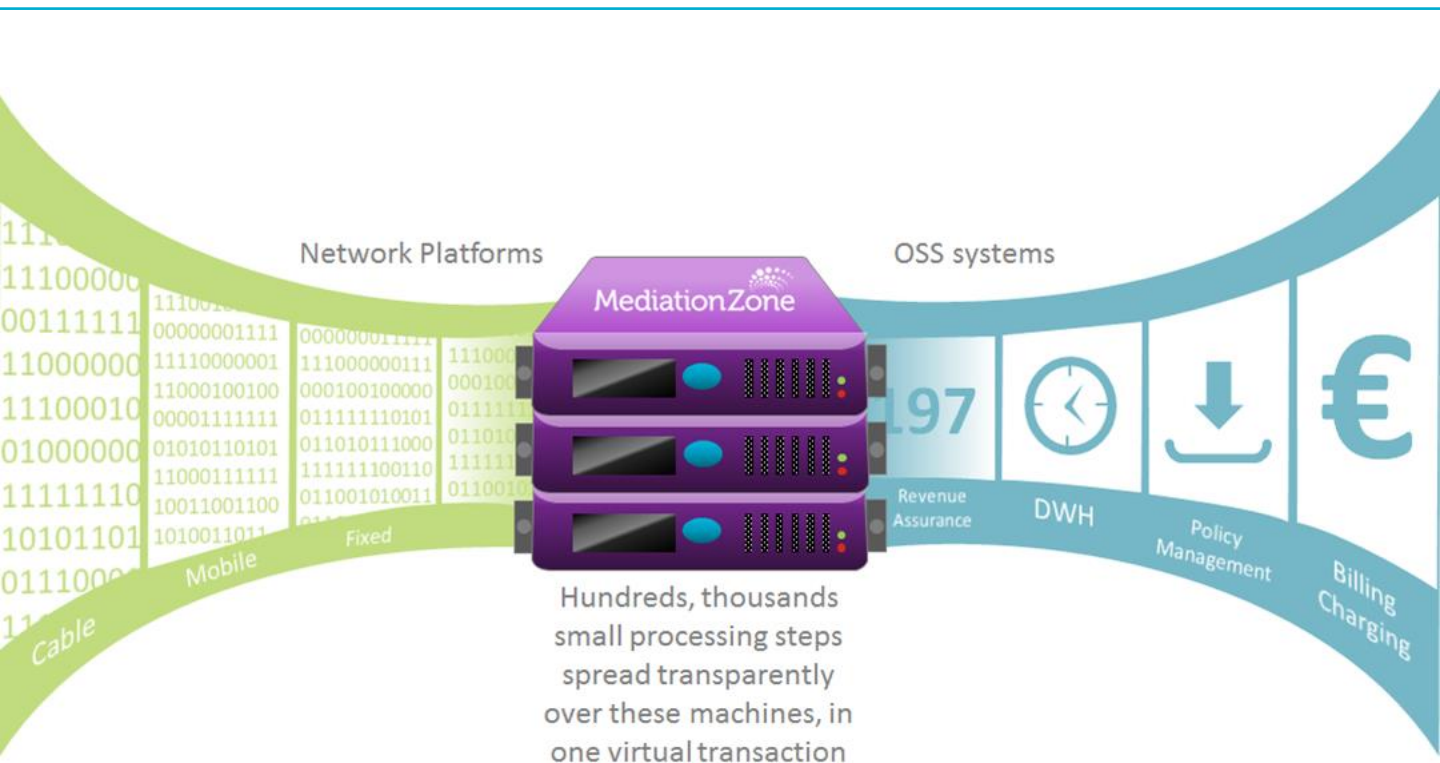
Central to MediationZone’s growing role within the evolving network and as an enabler of Customer Experience Management is its Extreme Scaling functionality. Support for new business models and the dramatic performance improvements required in this area are the result of the company’s Workflow Bridge technology.

Historically, mediation solutions have been highly input/output bound. This reality has not changed mostly because, until now, the status quo has been adequate to meet communications industry needs. The Extreme Scaling option for MediationZone changes that, allowing users to connect any workflows independently of type using a technology called Workflow Bridge. Workflow Bridge straddles the batch and real-time worlds and enables large batch jobs to be handled with multi-treading technology, while still perceiving transaction security. Also, its functionality enables transparent scaling within modern multi-core server architectures as well as across the multi-node architectures that are common in Cloud infrastructures. This opens up new ways and different possibilities in terms of designing a solution to make best use of resources and provide greater performance.

The Workflow Bridge communicates using either object passing (in process) or through the network. It is possible to either just send or send and receive information with all communication done asynchronously in order to make best use of resources.

In a next generation network context, the Workflow Bridge supports passing of data to many receivers, which provides the option to scale out to secure future performance requirements by simply adding additional hardware, as well as to secure a highly available solution. Put simply, it enables messages to pass between several machines over an in-memory architecture, dramatically improve resource usage in the process.

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In short, MediationZone now provides the technology to completely remove the boundaries between processing in batch and real-time modes. As an example, a user can now collect files and process them using the capabilities of the real-time workflow engine, without having to go through disk for the passing of data. This means users can:

- Better leverage existing hardware
- Remove hardware bottlenecks and lower TCO further
- Address 4G/LTE and the data explosion confidently. With data volumes growing and therefore scalability and high availability becoming critical, the Workflow Bridge provides the solution CSPs require
- Simplify operations when scaling architectures through automatic data distribution

MediationZone: A proven solution for the data explosion

We believe that MediationZone is the only mediation system capable of delivering the proven scalability modern networks demand to the extent that it can support the requirements of OSS mediation and the Customer Experience. Directly and via partners, MediationZone is now being deployed live for LTE Network Assurance/OSS Mediation usage at a rate of almost one implementation every week in 2013, with more than 10% of the worlds operators using MedationZone for Service Assurance in an OSS context today. Deployments scale easily to over 3 Million transactions per second of real-time processing, providing enrichment, correlation and smart data reduction capabilities.

Service Providers who face critical challenges evolving their businesses and protecting and expanding market share as their networks evolve can learn more at www.digitalroute.com

