

Putting Mediation to New Uses

By Lars Mansson

There's a compelling argument that, when it comes to data processing, telcos underutilized an application in their IT stacks: mediation.

It's worth understanding why because with a grasp of the reasons, CSPs can make significant progress in both data and service management for little additional outlay (of either time or money) simply by re-purposing or extending an existing technology investment. In a market where budgets are tight, lead-times short and finding competitive advantage is critical, this matters.

The present, limited view of mediation exists because mediation technology is almost exclusively seen in the context of a single use case, in the BSS domain: billing mediation. It's for this purpose applications have are most often – almost exclusively, in fact – applied. As a result, the core characteristics of the technology have been overlooked.

However, the reality is that mediation is not just a “data pre-processing box operating within the billing process” and by extension simply another component in the operator's BSS stack. Slowly, that limited view is changing and leading CSPs are now putting mediation to a growing variety of uses.

In reality, mediation, if the right software is used, is a “use case agnostic” smart data integration and management application, and billing mediation is just one of many ways to harness its underlying functionality to commercial advantage. Its underlying performance characteristics and functional assets enable it to deliver value in a variety of areas. Consider:

- **Integration:** Mediation provides an integration function that acquires data from one source and processes it before sending it to another. In large volumes. The sources themselves are irrelevant; information is collected from Point A, mediated, and forwarded to Point B. Points A and B could be anywhere or any thing. Yes, they could be charging records (CDRs) from a network element sent to a Billing application, but that's just one example among many.
- **Correlation:** Mediation processes – aggregates, de-duplicates, correlates and so on – the data it captures (in order that applications can receive actionable information in a usable format rather than a tidal



wave of raw information). As in the case above, while this has historically most often been for charging and billing, that doesn't have to be the case. Data is data. Mediation processes it. And the bigger the volume and complexity of data for collection, the more Mediation is needed if applications are to perform to their potential.

- **Offload:** Regardless, again, of Points A and B in the example above, smart data processing offloads (often by huge percentages) applications, in the process rendering the IT stack more cost-effective to run and more efficient in performance. Mediated data enables offloading that allows other applications (from an OCS to a CRM) to perform better. For example, mediated data is readily actionable; un-mediated data leaves analytics applications looking for needles in haystacks.
- **Scalability:** Huge volumes of data are already generated by telco networks and they are growing. Mediation can process not only today's flow but also keep up with expected volume growth (if this isn't the case with your present mediation application then you should be looking for a replacement). Whether data needs to be processed for Customer Experience Management, Network Analytics, Billing, Fraud Management or other purposes, Mediation has the inherent performance characteristics to handle it.
- **Configurability:** Mediation, or at least “modern” mediation solutions are easily configurable to keep pace with the quickly changing requirements and business models of the system user. Any action a result of which is the generation of data (and in telco that is more or less any action), mediation has a valuable role play.

Viewed in this light, CSPs might ask themselves whether they're fully leveraging their mediation investments. At

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present, few are and that may be because they lack clarity on where else they can find value. It's also likely a result of CSPs' embedded organizational structures wherein responsibility for data processing from network domain to IT layers (such as BSS and OSS) is widely dispersed across different organisations. In addition to using Mediation for billing purposes (a subject that requires little introduction here), we see at least three timely and important "new" Use Cases that Mediation applications can address: in the domains of OSS, and policy control, and in what I call "lean stacks". Let's look at these in more detail.

OSS Mediation

As I've already pointed out, data is data. And telecoms networks generate data that's of value for reasons beyond just generating a bill. For instance, requirements historically placed on traditional Analytics and OSS systems by telcos have mainly been based on processing aggregated counter data. Today, these need to be adapted to accommodate raw event data at higher volumes and in real-time. Furthermore, network quality has become central to defining service experience. Yet despite these realities, misconfiguration, damaged equipment, failed upgrades and handset-related problems more often than not go undetected for long periods. Why? It's most often because data related to these (and other) issues is processed in siloes (different application suites for different source material) within the OSS domain with the result that seldom is a full, end-to-end view presented to the applications that would benefit from having one.

Without the proper tools for creating and acting on information at network-, customer-, and session-levels, hidden service problems, lack of root-cause analysis and a failure of pro-active retention activity lead to churn for the CSP, not to mention less than ideal customer awareness and communication efforts.

Despite this, traditional OSS management products are network-centric, displaying node health and performance through agreed Key Performance Indicator (KPI) metrics. This type of monitoring will doubtless continue to be an essential part of network management in the future, but more is needed today. Mediation applications, purposed to deliver OSS Mediation, provide the answer.

OSS Mediation shifts the focus from measuring how well services are performing to how performance actually affects the subscribers' experience. Once this is added to traditional, network-centric OSS, service performance data can be contextualized to deliver impact analysis from an individual customer perspective. Mediation applications are perfect for this role.

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From PCRF to Mediation-based Control of Policy Decisioning

Here I'm using Policy and Charging Rules Function or "PCRF" as a general industry-term, although the role Mediation can play in the context of Policy goes further than simply PCRF. CSPs need a Policy solution that removes the constraints associated with traditional PCRF products. These constraints are mainly related to a lack of flexibility, which can lead to complex requirements and long lead-times when operators want to add new services or make changes to policy rules.

Open platforms for PCRF that enable flexible configuration are required to meet operators' goals of achieving new service deployment in days and in a cost-effective way. Mediation applications have characteristics that make it ideally suited to deliver what's required. Think about it:

- Integration and correlation of "all" the data from the network.
- Transformation and creation of drill down customer experience data for policy decisions in real-time.
- Derivation of churn, consumption and trend data from big data business intelligence repositories.
- Collects and Controls the charging dialogues between the network and the online/offline charging systems.
- Offering an integration layer to enable a partner ecosystem.
- Control and management of network policy through PCRF functionality.

An "active," mediation-based approach to controlling policy as a strategic rather than an enforcement tool enables the CSP to action much more than network protection and differentiated service charging. It means controlling the experience of the subscriber over a multitude of silos using a horizontal target architecture. With a mediation-based approach, policy becomes a cornerstone for innovative

service launches, increasing customer satisfaction and generating new revenue streams.

Now is the time to move in this direction with the CSPs PCRF; tomorrow mediation-based approaches are also needed in the next step of policy control, namely when the next generation of programmable networks are emerging with NFV & SDN.

Lean Stacks: Offload, Usage and KPI Management

Given the rapid pace of change in the communications industry, a new architecture specifically capable of enabling faster delivery of new services is mandatory. That's because traditional BSS and OSS stacks tend to be a barrier to this sort of progress, not an enabler. Why? In part, the IT cost for enabling systems like legacy billing and network analytics to perform new functions is growing exponentially, as applications have to be adapted to accommodate the service delivery transition.

We know that the cost-per-processed-event in legacy BSS is already prohibitive; yet what happens when these stacks have to take on the sort of lower-margin or even negative-margin services that CSPs need to deploy to compete in parallel to delivering the customer control functionality necessary to simultaneously support high margin, up sell services?

Mediation can solve this problem (and remove the dependency on static, pre-integrated and expensive legacy BSS and OSS systems) while delivering an efficient and configurable environment. This is done not by system replacement but through application enablement, where the traditional support system infrastructure is "offloaded" to a new, mediation-based solution.

Usage management provides the ability to create "data buckets" within the mediation application, in an almost unlimited variety of hierarchies and to which can be assigned any "value". Where the underlying service is simple (and this is the case with the vast majority of the services CSPs offer), it is an effective and low-cost way of deploying, for example, metered service bundles (the sort of packages of voice, SMS and data which these days form the basis of most service provider's competitive offerings to consumer customers, and also when offering connectivity for M2M and IoT.) Its real-time subscriber control functionality also enables smart bundle up-sell.

These approaches mean expensive charging systems can be offloaded because mediation with usage management functionality can handle the "heavy lifting" that would otherwise be done further downstream.

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Usage management brings a parallel value in the OSS domain too, via a similar approach. Here, mediation with KPI management provides the ability to directly create "KPI counters" in mediation layer, offloading traditional OSS systems and allowing new types of OSS applications to be rapidly deployed and focused exclusively on supporting what they are purposed for.

Clearly, each of these three Use Cases demands further, and more detailed investigation; but this article is not the place for that. The point I want to make here is to recognise that mediation can no longer be seen or defined simply through its role in the billing process.

As such, mediation applications are an almost inevitably underutilized asset in the data centres of a great majority of telcos. The good news is that because of this, they represent a fantastic opportunity to drive growth. The increasing number of CSPs seeing a strategic opportunity and putting their mediation solutions to non-traditional uses underlines this.