



SETTING THE STANDARD IN MULTI-SERVICE MEDIATION



TOGETHER, YOU WIN.

The telecoms industry is going through a period of unprecedented change. Traditional voice revenue is continuing to decline and customers are increasingly demanding differentiated products and services.

Service providers have responded to these challenges by launching next generation networks—such as WiMAX, UMTS, HSPA and LTE—and rolling out triple and quad play offers. They are also exploring new technological options such as IP Multimedia Sub-systems (IMS).

Combining voice and data services on a single network benefits both consumers and operators. Today's customers expect and want to be able to communicate and entertain themselves at any time, in any place and on any platform. Next generation networks address this requirement.

The latest networks also enable operators to cut costs, enhance customer service and improve operational efficiency—key drivers to business transformation.

CHANGING MEDIATION REQUIREMENTS

The convergence of voice and data services is having an effect on mediation. In the past, mediation systems acted as a buffering layer between the network and other systems. They collected data from the entities integral

to a telecommunication network. This data contained information on service delivery and network usage. Once the data had been conditioned it was delivered to other upstream OSS/BSS systems.

Traditionally, this is known as post-event mediation. Today's mediation solutions still contain a post-event mediation component, but they differ from their predecessors in a number of ways. For a start, they have been specifically re-engineered to cope with the demands of next generation and converged networks.

Next generation networks increase the demand on mediation. A real-time, bi-directional flow of data and information between the network and back office systems is required. This is termed online mediation. In this environment, mediation provides interoperability between the network and the appropriate OSS/BSS platforms for immediate event management, real-time rating and account balance management functions.

In addition, next generation IP-based networks are complex, posing substantial activation challenges. They involve many more network devices and application servers. Creating a subscriber service greatly increases the number of activation events and overall process complexity.



No longer can a single application be relied upon to fulfill all mediation requirements. Operators generally agree that the silo approach to mediation is redundant and that they need to adopt a unified platform that caters for all mediation requirements.

Today's mediation solutions place a strong emphasis on service management. This change in focus reflects how telecoms companies have evolved. Operators now act in the same fashion as media companies—their primary focus is to create and deliver a set of services for mass consumption.

As a result, modern mediation solutions have three levels of functionality:

- **Proactive**—able to grant access to a service based on financial and policy consideration
- **Reactive**—capable of collecting service usage records and correlating them into charging data records (CDRs), which are then sent to other BSS and OSS elements for high level processing
- **Constructive**—able to dynamically change network parameters for effective service delivery

Due to the emphasis on service delivery, mediation systems have to perform to the very highest standards. For example, active mediation systems are proactive. An active mediation system needs to be both highly available and able to respond to requests with minimum latency.

Post-event mediation systems, on the other hand, are reactive. While it is clearly desirable for them to also be highly available, nevertheless the primary focus is upon event volume processing. Post-event mediation applications manage event volumes scaling into many billions of events per day and are measured in terms of throughput.

Finally, there are service activation solutions. They are constructive—a service activation system manages complex workflows and negotiates the actions between customer facing systems and network devices. Service activation systems are measured in terms of flexibility and adaptability.

TOTAL SERVICE MEDIATION

Can a single solution be truly proactive, reactive and constructive? Can it provide genuine tier 1, world-class performance? And can it process billions of events on a daily basis? Many mediation system vendors claim that their products do precisely this. But is it conceivable that one solution could be capable of providing superior service across all three functions? In any single solution there are bound to be design compromises. For example, one mediation solution may have a very powerful proactive engine and a much weaker reactive one. Another might have a strong constructive system and a less efficient proactive engine.

CSG is the world's leading provider of mediation solutions, with over 250 customers in the telecoms industry. In response to the needs of the market, CSG developed Total Service Mediation (TSM), a framework that integrates the user experience across its mediation modules, while providing best-of-breed functionality. Within the TSM environment, all mediation systems share resources, software sub-systems and business logic.

In short, TSM is a comprehensive methodology for deploying mediation in its entirety. The objective of TSM is to contribute to quality service delivery where efficiency is maximized and cost is minimized.

The benefits of TSM are obvious. It is designed to provide the commonly required IT system characteristics of cost control and ease of implementation.



Commonality across the mediation functions reduces training efforts and allows a single team of business analysts to manage the entire mediation business. All the TSM functions execute on low cost commodity hardware and in conjunction with open source.

Sharing resources and business logic provides operational efficiencies while also allowing faster deployment of new services. All control and monitoring tools are consistent across functions. Using the TSM approach means service providers can utilize best-of-breed applications within a single framework to deliver integrated services and manage the resultant revenue.

TSM in Brief

- High performance, quick response event processing
- Integrated service management
- Reduced operational costs

TSM in Detail

Aside from being able to access the wealth of knowledge and experience CSG possesses, there are further reasons to adopt the TSM approach. Let us take a look at these in more detail.

Common Look and Feel

All of the CSG applications share a common log-on. User authentication is centralized thereby enabling a greater degree of security and easing user administration. The graphical user interface for all mediation applications leverages a common architecture.

Consequently, all instrumentation, user presentations, and navigational techniques are uniform across applications. Moreover, the use of colors, icons, graphics and screen design is similar across applications, thus supporting a common user experience.

CIO, AIRTEL

“CSG’S TECHNOLOGY, EXPERIENCE AND CAPABILITIES WILL HELP US SEAMLESSLY UPGRADE OUR MEDIATION PLATFORM AT A TIME WHEN WE ARE LAUNCHING MARKET-CRITICAL PRODUCTS AND SERVICES TO OUR RAPIDLY GROWING CUSTOMER BASE.”



Common Approach to Project Implementation

The common platform for CSG’s mediation applications naturally permits sharing the same approach towards project implementation. The applications share the graphical user interface and the graphical workflow tools for business logic design. This commonality allows uniformity in designing the mediation implementation.

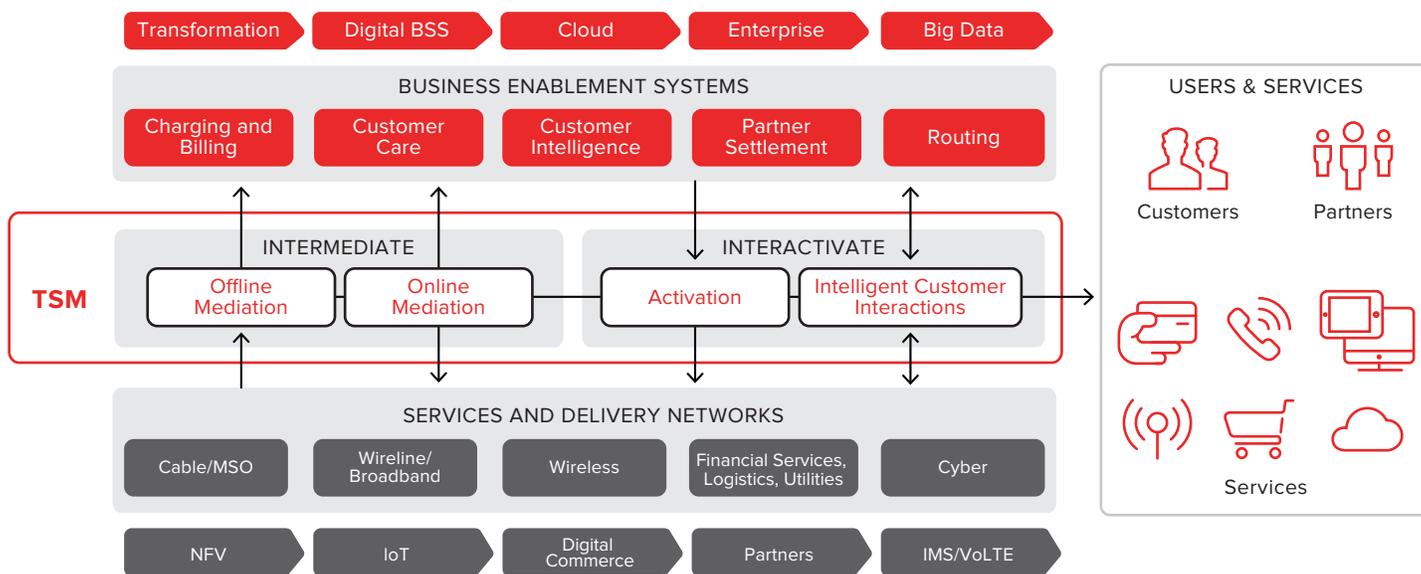
The platform makes use of scripts, reference tables and the data dictionary. Moreover, TSM allows sharing of the data dictionary and reference tables across the applications. This allows for a common execution approach between the mediation applications.

All the framework applications allow interactive testing and share log files and reporting techniques

“MORE THAN 250 CUSTOMERS INCLUDING WIRELESS BROADBAND AND NEXT GENERATION SERVICE PROVIDERS ARE ALREADY USING CSG MEDIATION TECHNOLOGY.”

in their architecture. This allows uniformity in monitoring implementations across the entire TSM platform. The commonality in platform allows sharing of project implementation methods across the applications. This convenience extends through common tools and the ability to share resources across applications to enable faster implementation.

TSM EFFICIENTLY INTEGRATES CRITICAL BUSINESS FUNCTIONS WITH EVOLVING NETWORKS





Common Methodology for Operational Control

Event and error logs are an integral component of operational control. The tools used to view the logs or monitor errors and alarms are common across the various TSM applications.

All of the applications use SNMP to communicate with the centralized monitoring systems. Common screens and methodologies characterize manual control of business processes.

Business Modelling via Workflow

A consistent theme within the TSM framework is the use of workflow to graphically model the processing steps that mediation executes.

Graphical representation of each processing step enables staff to quickly review and understand the business logic processing that it represents. Furthermore, the modular nature of each processing step enables their re-use in multiple workflows.

Integrated Development Environment

TSM provides an integrated development environment which increases efficiency during the implementation process by:

- Providing step-by-step testing of individual workflow operations
- Offering a controlled environment for testing
- Enabling repeatable and iterative testing of individual workflow operations

TSM FEATURES	DETAILED BENEFITS
Lower Operational Costs	<ul style="list-style-type: none"> • Low TCO and superior price/performance characteristics, using commodity hardware • A single management dashboard • Reduced training costs and fewer resources required to manage the applications
Un-Paralleled Scalability	<ul style="list-style-type: none"> • Processing massive event volumes • Complex business logic • Optimal utilization of available hardware
Proven, Low Risk Technology	<ul style="list-style-type: none"> • Built for 24x7 operation • Distributed architecture • 100% service availability • Mediation engine provides the greatest performance available in the market today
Integrated Service Management	<ul style="list-style-type: none"> • A single framework, providing all service mediation requirements for fully convergent Forward Mediation, Active Mediation, and Service Activation • A framework methodology—common look and feel, consistent approach to implementation, common methodology for operational control



TSM—Perfect for All Your Mediation Requirements

Whether you are an established service provider that requires a proactive mediation system or service activation application; or whether you are a brand new start-up that requires a comprehensive mediation solution, TSM is the answer.

TSM provides a clear migration path to next generation services. You can take care of all of your mediation requirements at a stroke. There's no need to purchase a new adjunct mediation product and waste valuable time and money integrating it into your existing IT infrastructure. If you decide you want to activate a new service, you can. If you want to charge customers online, TSM gives you the capability.

If you're a new market entrant, TSM can take care of all of your mediation capabilities. The platform enables you to reuse skills and keep training to the bare minimum.

TOTAL SERVICE MEDIATION

Setting the Standard in Multi-Service Mediation

TSM is central to CSG's strategy to ensure that it continues to lead innovation in the mediation market, while focusing on the characteristics that have already made its products the market leaders in multi-service mediation.

More than 250 customers including wireline, wireless, broadband and next generation service providers are already using CSG's mediation technology.

Proven, carrier-grade performance, faultless reliability and low cost of ownership, allied to easy system management, extensive configurability and flexibility ensures that all our mediation customers can rely on CSG's mediation technology.

The TSM framework provides any service provider with complete control over its mediation processes. With TSM a single, integrated solution can be deployed to manage a variety of tasks relating to pro-active event processing, revenue assurance, business intelligence, charging and network usage.

TSM creates a new standard for low cost, reliable, efficient and pro-active multi-service mediation management.

ABOUT CSG

CSG simplifies the complexity of business transformation in the digital age for the most respected communications, media and entertainment service providers worldwide. With over 35 years of experience, CSG delivers revenue management, customer experience and digital monetization solutions for every stage of the customer lifecycle. The company is the trusted partner driving digital transformation for leading global brands, including Arrow, AT&T, Bharti Airtel, Charter Communications, Comcast, DISH, Eastlink, iFlix, MTN, TalkTalk, Telefonica, Telstra and Verizon.

At CSG, we have one vision: flexible, seamless, limitless communications, information and content services for everyone. For more information, visit our website at csgi.com and follow us on [LinkedIn](#), [Twitter](#) and [Facebook](#).