



CSG INTERMEDIATE

**THE AGILE MEDIATION
PLATFORM FROM CSG**





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With hundreds of global installations, CSG Intermediate is one of the most trusted offline and online mediation solutions in the world. Intermediate captures and processes customer usage events of all kinds from any service delivery network for industry leaders in telecom, finance, logistics, and government. CSG processes over 41 trillion events per year for our largest customer alone.

CSG Intermediate can invigorate your current business and bring you the most value when adapting to new technologies, devices and services. With unprecedented expertise in managing the transition to new networks, we'll help minimize costs and streamline internal processes with a single strategic mediation platform for all network technologies and services.



NEXT-GENERATION NETWORKS NEED NEXT-GENERATION MEDIATION

IT ALL STARTS WITH THE NETWORK...

Agility. Speed. Quality. These attributes are among the most valued characteristics by users of any communications service. CSPs around the globe are responding in kind with investment in network upgrades. Hundreds of wireless service providers are in the midst of 5G deployments; terrestrial and submarine fiber rollouts are being accelerated in no small part due to increasing government investment in national broadband networks; and cable operators worldwide are upgrading to the next-generation speeds with national digital upgrades or the adoption of DOCSIS 4.0. All of these investments are required to enable the next-generation services that consumers demand.

Simultaneously, we see the development of next-generation services driving new business models across industries such as cloud services and Internet of Things (IoT) services. And these new services, combined with the explosion of digital content, generate data records in volumes orders of magnitude greater than the past. Each of these developments—network evolution, cloud services, Internet of Things and big data—are transformative in and of themselves. Collectively, they're altering the industry beyond network technology, and affecting analytics and data management, service delivery, charging, billing and more.

...BUT IT ENDS WITH THE CUSTOMER

The provision of next-generation network technologies is table stakes for the service provider. They must seize emerging opportunities, grasp and retain market share in increasingly competitive environments, and rapidly deploy new services. Monetization of new services is a mandate to recover the huge investments being made. But, monetization is different in the new world of all digital, high-speed networks connecting things more than users. It goes beyond associating value at the individual transaction level, and more about deriving insights and value at the collective level. These insights allow CSP to see more deeply into individual customer behavior, market trends, and partner performance, which results in process efficiencies and margin growth. The greatest understandings are derived from the most timely, accurate and complete set of transactional data. While a single record may not have a charge, its value is as part of the collective and must be collected, processed and stored with as much attention and efficiency as ever before.



DIGITAL MEDIATION CHALLENGES

OPERATIONAL AGILITY

As CSPs look to monetize digital services, IoT and 5G, operational agility will become a focal point. CSPs will need continuous improvement capabilities for the operations and processes around 5G.

Digital mediation must uphold its core revenue management function through this continuous flurry of changes: rapidly processing massive volume of data to ensure smooth business operations while minimizing the risk of revenue leaks. This will always be a top priority among CSPs and will remain a key KPI as CSPs monetize 5G, IoT and digital services. CSPs will need a reliable digital mediation solution that eases the burden and simplifies the process required to manage the data surge from 5G and IoT.

The ideal solution will be optimized for scaling, and will offer intelligent alarm diagnostics, making it easier to troubleshoot issues, saving valuable time and effort. Additionally, the most effective solution will offer new methods of analyzing business logic and KPIs. By adding these features to their operational arsenal, CSPs can be ready for an influx of digital mediation data.

ARCHITECTURAL AGILITY

Cloud computing has been available for some time. Only recently has it gained critical mass. One of the main growth drivers in cloud adoption is the desire to optimized costs based on actual usage and improve business agility. A growing number of deployments are part of CSPs' overall digital transformation programs, which are typically enterprise-wide, and are based on on lean process models and cloud-based architecture frameworks. By transitioning to the cloud, CSPs are equipped to meet customer demands in real time and elastically scale, tying costs to current demand versus the traditional method of investing up front to account for unpredictable peaks. In addition, businesses can further simplify their digital mediation operations by having their services managed.

TM FORUM

NEARLY HALF OF COMMUNICATIONS SERVICE PROVIDERS AGREE THAT CLOUD BSS WILL INCREASE AGILITY.



BUSINESS SECURITY

By ensuring customer data is encrypted and secured, CSPs can protect their customers and utilize insights gained from customer interactions to craft better customer experiences. The ideal mediation solution includes the option to encrypt data at different levels, such as application-level and field-level, giving providers flexibility in their approach to security. Adequately protecting customer data will also strengthen relationships with customers.

AGILITY AND REVENUE MANAGEMENT FOR 5G, IoT AND CLOUD

Service providers will benefit from these developments on multiple fronts. They gain by providing higher bandwidth connectivity and delivering digital services that customers demand. That means they can support a greater number of devices and connections across a growing number of industry use cases, and extend their traditional connectivity-based offer to be an enabler for and provider of bundled cloud solutions. CSPs possess a unique advantage to provide cloud computing because of their technical credibility, command of the network, position of trust, and preexisting relationships with large and small enterprises.

Technology introductions are faster, product lifecycles are shorter, and mass adoption has accelerated. CSPs need to be more agile to take advantage of new opportunities, more diligent to optimize revenue and employ effectual business models to pull it all together.

At the CSP's heart, a flexible BSS solution can be a revenue driver by improving business elasticity to adapt to new technologies, applications, devices and usage paradigms. In a challenging economic climate, there is an even greater focus on managing costs, but there is also opportunity and growth. Fast-moving operators have a distinct competitive advantage to win early market share. But these advantages come with data mediation challenges:

- **Revenue Opportunities**—capitalizing on new opportunities arising from launching new services more quickly than competitors
- **Revenue Leakage**—ensuring seamless integration among mediation platforms, network elements and varied service types to eliminate redundancy (systems and processes) and revenue loss
- **Manage and Reduce Costs**—predictably managing the initial costs of supporting new networks and services, while streamlining the operational costs of co-existing legacy networks



TRANSACTIONAL MODEL USE CASE

Telecom is a demanding market—characterized by high-volume transaction processing requirements from many sources (network types) for myriad services. Leading companies in vertical markets beyond telecom are looking to telecom systems to meet their transaction-centric business models.

One of the world's leading transaction processors and payments companies relies on CSG technology to provide the reliability, speed, and agility that are fundamental to its business strategy.

CSG Intermediate handles the daily collection of transaction records from across its payment network for correlation, duplicate checking, enrichment and the generation of billing events. After just the first six months of live production, the system had processed more than 10 trillion transactions.

The financial services company didn't choose CSG Intermediate to simply replicate its previous processing capabilities; instead, it selected a flexible platform to enable its current and future business strategy—faster and at a lower cost.

And in an industry charged with keeping track of every penny, Intermediate's robust error management capabilities help prevent revenue leakage as well as identify individual events and their sources that need correction.

The more that things change—network evolution, business model shifts, transaction volume explosion—the more you'll benefit from using the CSG Mediation platform. We support an extensive range of network technologies and have integrated IMS, NFV and 5G from the earliest deployments.

The largest and fastest growing operators in the world rely on CSG to consolidate and replace their multiple legacy mediation systems to support the latest network technologies, like cloud-native and the evolution to 5G, in parallel with existing circuit-switched services.

CSG Intermediate can invigorate your current business and bring you the most value adapting to new technologies, devices and services. With unprecedented expertise in managing the transition to new networks, we'll help minimize costs and streamline internal processes with a single strategic mediation platform for all network technologies and services. Intermediate supports the networks and devices prevalent today, and is extensible to support those yet to be introduced.

ONE OF THE WORLD'S LEADING TRANSACTION PROCESSORS AND PAYMENTS COMPANIES RELIES ON CSG TECHNOLOGY TO PROVIDE THE RELIABILITY, SPEED, AND AGILITY THAT ARE FUNDAMENTAL TO ITS BUSINESS STRATEGY.



INTERMEDIATE PRODUCT OVERVIEW

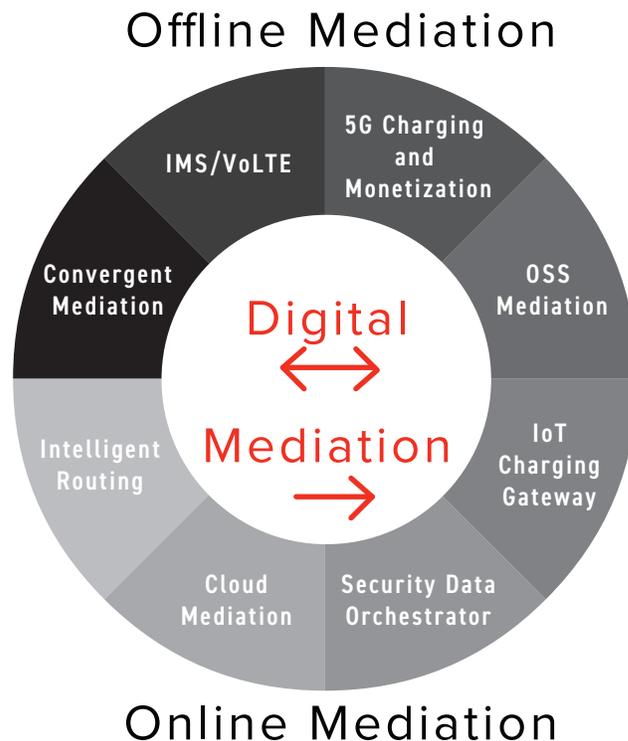
With hundreds of global installations, CSG Intermediate is one of the most trusted offline and online mediation solutions in the world. Today we process over 41 trillion events annually for our largest customer alone. Intermediate captures and processes customer usage events of all kinds from any service delivery network for industry leaders in telecom, finance, logistics, and government.

CSG Intermediate offers a cost-effective way to:

- Reliably process vast transaction volumes regardless of network or usage type
- Quickly implement new business requirements
- Meet/exceed internal and external auditing requirements
- Consistently lower total cost of ownership and deliver a fast ROI

Intermediate's adaptive feature set and proven scalability make it a smart, consolidated solution that delivers long-term value and ROI. By combining comprehensive functionality for both online and offline mediation, Intermediate is uniquely positioned to provide digital mediation for any event or service type from any source.

With rapid implementation times, flexible deployment options including as a service or in the cloud, and supported by lowest cost commodity hardware, Intermediate can accelerate your time to monetizing your next-generation networks and services.





OPERATOR TRANSFORMS BSS WITH INTERMEDIATE

When an operator decided to overhaul their entire business the BSS IT infrastructure was a critical part. To support this transformation, they turned to CSG—a long-term trusted partner. With CSG, the operator re-engineered their BSS from the ground up, deploying modules of Singleview, Digital Mediation and Digital Wholesale.

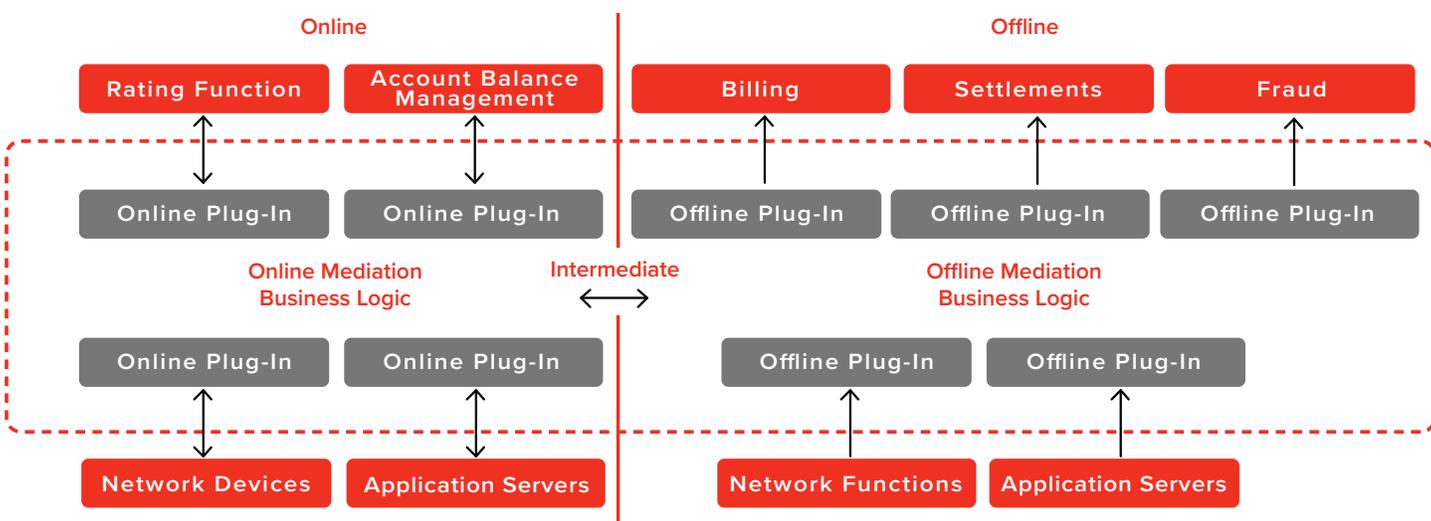
As part of the transformation, CSG Intermediate and the Active Mediation Manager (AMM) perform intelligent routing of requests between the network and real-time charging systems. This approach not only simplifies their architecture, but also reduces OCS integration costs, adds charging intelligence between the network and business systems and ensures faster time-to-market for new networks and services—all delivered in just seven months.

THE SOLUTION PROVIDES INTELLIGENT CHARGING OF SMS, DATA, CONTENT AND VALUE-ADDED SERVICES, AND ENABLES THE OPERATOR'S TRANSFORMATION FROM A LEGACY IN TO A NEW CSG OCS BY SELECTIVELY ROUTING NETWORK TRAFFIC TO EITHER PLATFORM. WHAT WAS A LOW-COST OPTION FOR THE TRANSITION STAGE HAS BECOME A PERMANENT NETWORK MEDIATION LAYER DELIVERING HIGH SPEED ROUTING AND MORE.



INTERMEDIATE FEATURES

- Consolidated platform—Intermediate combines horizontal—offline and online—and convergent—wireline, wireless, 3G/4G and 5G—mediation onto a single platform to deliver:
 - Unparalleled performance—exceeds transaction throughput of legacy systems by a factor of ten, so it requires less hardware
 - Ultra-low latency—attain low average transaction latencies on cost-effective commodity hardware
 - No third party products—eliminates the need for expensive commercial databases or in-memory caching software
- Proven low-cost, high availability—highly reliable architecture, supporting HA across bare metal, virtual and cloud platforms
- Seamless plug-in integration—easily configure mediation portals with off-the-shelf support for network functions and business systems
- Fast configuration—drag-and-drop plan management for configuring online and offline mediation workflows
- Flexible business logic—quickly implement mediation rules for transaction validation, correlation, de-duplication filtering and routing rules with powerful scripting
- Centralized operations—manage and monitor distributed mediation nodes in a single dashboard





INTERMEDIATE BENEFITS

BUSINESS ELASTICITY

Intermediate provides the basis for an agile digital mediation platform, designed to integrate with diverse network elements, support a multitude of usage records and adapt to evolving revenue models.

UNPARALLELED APPLICATION PERFORMANCE

Intermediate provides cost-effective scalability and the raw power to exceed the demands caused by an upsurge in data volume, variety and velocity requirements.

REVENUE ASSURANCE

Proven to protect revenue as networks evolve and volumes magnify—eliminating gaps among networks and supporting systems.

LOWER TOTAL COST OF OWNERSHIP

Integrated online and offline mediation and consolidating multiple legacy systems leads to lower operating costs.

ACCELERATED TIME TO MARKET AND ROI

Unique configuration and testing tools to enable fast time to market for new services and agile integration with plugin support for new network elements.

PROVEN MEDIATION SOLUTIONS

Business is uncertain, but Intermediate instills confidence as it is a carrier-grade solution that has excelled and surpassed the competition in the most demanding network operations.

INDUSTRIAL STRENGTH

With over 35 years of experience, CSG has established technical credibility and industry expertise while accumulating impressive performance statistics. CSG created its Billionaire Club to recognize the outstanding accomplishments of its customers; our largest customer processes over 30 trillion events every year. The following are highlights of Intermediate deployments:

- Proven to capture and process customer usage events of all kinds from any service delivery network
- CSG's ten largest customers support over 620 million subscribers
- Largest Intermediate deployment supports over 100 million subscribers in a single instance
- Complex deployment integrated with over a thousand network elements and devices

MEETING TOMORROW'S CHALLENGES TODAY

CSG customers around the globe have already witnessed a huge increase in charging event volumes generated by the explosion of mobile broadband services, the rollout of 5G, the provision of cloud services and the adoption of IoT use cases. CSG Intermediate keeps pace with the transaction volume growth of some of the world's largest operators today, in a cost effective manner and with the flexibility to enable what comes next.



ABOUT CSG

For more than 35 years, CSG has simplified the complexity of business, delivering innovative customer engagement solutions that help companies acquire, monetize, engage and retain customers. Operating across more than 120 countries worldwide, CSG manages billions of critical customer interactions annually, and its award-winning suite of software and services allow companies across dozens of industries to tackle their biggest business challenges and thrive in an ever-changing marketplace. CSG is the trusted partner for driving digital innovation for hundreds of leading global brands, including AT&T, Charter Communications, Comcast, DISH, Eastlink, Formula One, Maximus, MTN and Telstra.

To learn more, visit our website at csqi.com and connect with us on [LinkedIn](#) and [Twitter](#).