



2013 Global Stratecast Communications Service Provider Billing Mediation Market Technology Innovation Award



FROST & SULLIVAN



50 Years of Growth, Innovation & Leadership

Technology Innovation Award Stratecast Communications Service Provider Billing Mediation Market Global, 2013

Frost & Sullivan's Global Research Platform

Frost & Sullivan is in its 50th year of business with a global research organization of 1,800 analysts and consultants who monitor more than 300 industries and 250,000 companies. The company's research philosophy originates with the CEO's 360-Degree Perspective™, which serves as the foundation of its TEAM Research™ methodology. This unique approach enables us to determine how best-in-class companies worldwide manage growth, innovation and leadership. Based on the findings of this Best Practices research, Frost & Sullivan is proud to present the 2013 Stratecast Global Technology Innovation Award in CSP Billing for the Mediation market to DigitalRoute.

Significance of the Technology Innovation Award

Key Industry Challenges

Technological innovation is essential for any growing and rapidly changing marketplace such as the communications service provider (CSP) billing domain. Technology is often used to reduce costs and increase productivity. In the case of billing mediation, in addition to reducing costs and increasing productivity, mediation truly makes many of today's complex communications services possible. Mediation technology is key to the success of the CSP billing market and ultimately, to the success of each and every CSP globally.

Technology innovation is part of a company's competitive strategy and is ultimately judged by the marketplace. A successful competitive strategy that incorporates technology innovation leads to sustainability of existing customers, new customers and new revenues, while an unsuccessful strategy leads to loss of market share.

What is Billing Mediation?

Transaction usage data comes from multiple network sources, including: signaling networks for both IP data and traditional voice; call and data usage detail records generated by the devices that make up a network—generally known as “xDRs;” data servers (content servers, authentication servers); and the “packets” that constitute the services that traverse an IP network. While each source has its designated purpose, all can be used for other business needs. To gain understanding about customer usage in real time, and apply decisions to allow or disallow certain events, CSPs use active bi-directional mediation.

Typically within the mediation engine, usage data from all sources is collected, correlated, and aggregated. The resulting information stream is then sent to a real-time rating & charging engine to complete the bill calculation process; whether in real-time or on a batch basis according to CSP business strategy and type of customers involved. Real-time

mediation is generally bi-directional, to address network or service behavior needs, along with user control functions and customer notification requirements. The mediation function is the linchpin to any real-time services strategy.

Usage volume on CSP networks has been exponentially rising for the last few years and there is no end in sight to this trend. Just a few years ago, a CSP billing mediation system handling a billion transactions per day was rare—today, Stratecast believes the largest CSPs must be prepared to handle 30 billion transactions per day today and be actively planning to go well beyond that level in the months ahead.

The Changing CSP Billing Mediation Marketplace

The Stratecast business support solutions (BSS) and competitive strategies team has taken a deep dive into the changing communications marketplace, and evaluated the role of billing and policy management within the communications service provider BSS operations. We conduct this in-depth analysis of the end-to-end billing supplier market every two years.

For the 2013 edition of our billing report series, Stratecast contacted in excess of 100 solution suppliers covering various aspects of the end-to-end CSP billing marketplace. Stratecast defines end-to-end CSP billing around six interdependent functional segments including: billing mediation; rating & charging; other core billing functionality; policy management (policy rules function); interconnect & settlement; and partner management. Our analysis of the total billing market includes the consolidated revenues from all six of these interrelated billing sub-segments.

Part 3 of the 2013 billing report series defines the billing mediation sector. This report will be published as two documents:

- OSSCS 14-10, Global CSP Billing 2013 Edition Part 3a: Billing Mediation Business Drivers and Market Trends, September 2013, which analyzes the key business drivers that are shaping the global billing mediation market and looks at the trends within that market.
- OSSCS 14-11, Global CSP Billing 2013 Edition Part 3b: Billing Mediation Market Share Analysis, Forecast, and Global Supplier Assessment, September 2013, which delivers an assessment and market profiles for over 50 suppliers, provides a market share analysis based on recent financial information, and establishes a five-year forecast for the billing mediation market.

This exhaustive study of the global CSP billing mediation marketplace provided Stratecast with a very strong sense of which companies were being rewarded by the marketplace for their technological innovations and competitive strategies. DigitalRoute and the two competitors we evaluated were chosen based on their similarities and on their success in the rapidly changing communications marketplace.

In these soon to be published reports on CSP billing mediation, starting with 2012 as the base year, Stratecast projects the 2013 CSP billing mediation market is approximately U.S. \$930 million, expanding at an 11.1 percent five-year compound annual growth rate (CAGR) to U.S. \$1.37 billion by 2017. The strong growth rate tops all segments in the end-to-end billing marketplace.

The global CSP billing mediation market, while fragmented with over 50 identified suppliers, is dominated by the seven largest market suppliers, which together control approximately 75 percent of the global billing mediation market by revenue. DigitalRoute and its two competitors are part of the seven largest market suppliers. DigitalRoute differs from its top competitors as the company remains almost entirely focused on the mediation market, while the other six offer a broader range of CSP billing solutions. DigitalRoute is also by far the smallest company, with approximately 200 employees, while its competitors have thousands.

DigitalRoute

For mediation, the company's MediationZone platform is a convergent solution, providing both off-line and online (active bi-directional) mediation capabilities in a single instance on a single system. In addition to billing mediation, the solution supports data integration efforts—from extract-transform-load (ETL) to data federation, synchronization and distribution—in addition to service assurance mediation and horizontal mediation applications—connecting any number of OSS and BSS systems to any number of networks, with a single MediationZone deployment.

DigitalRoute explained to Stratecast that MediationZone reduces the number of integration points that are required to efficiently manage usage data in any type of network, and it provides the functions to enrich and transform the data using a flexible workflow engine. Integration processes and business rules are modeled, configured, deployed, and maintained through an "intuitive" graphical user interface. The workflows are built using small, specialized building blocks that can be rapidly reconfigured or re-arranged to adapt to new requirements with minimal impact on the operational environment.

MediationZone has built-in support for a wide range of input and output formats and enables user-controlled format management through configuration. The workflow building blocks provide comprehensive processing capabilities.

DigitalRoute shared with Stratecast that it has current customers that use MediationZone to process "tens of billions" of billing transactions per day and on the OSS-side, it processes "hundreds of billions" of transactions per day.

DigitalRoute is a private independent software supplier focused on the global telecommunications industry. Based in Sweden, the company employs approximately 200 people. Founded in 2000, the company has expanded from a pure-play billing mediation supplier to a real-time data collection, aggregation, and correlation provider for any group of business functions—what the company calls "horizontal mediation". DigitalRoute explains

that its MediationZone platform is used for Billing, Policy Control, Data Warehousing, Reconciliation, Fraud Management, Business Analytics, Service Assurance, Diameter Routing Control and more, by over 270 communications service providers in more than 100 countries.

The business philosophy of DigitalRoute is quite different from its competitors. First, DigitalRoute has focused on mediation since its inception, and even its recent expansion into policy control is built around its strength in the mediation space. While many companies offer mediation, they also provide solutions in related areas including provisioning, rating & charging, balance management, retail billing, and interconnect billing. Such strategies are working well for many of the larger billing suppliers; however, the DigitalRoute strategy is to stay focused on delivering mediation software and solving the problems associated with massive amounts of network-originated data that must be addressed in real time. Second, the company focuses on developing a product which is easy to implement and upgrade. Third, DigitalRoute focuses on license sales, instead of "install with heavy services effort." Fourth, they do not seek to do it all alone, as DigitalRoute has built an extensive partner network over the years, many of whom OEM the DigitalRoute platform into their solution offerings.

The market focus of DigitalRoute has allowed the company to utilize an OEM-partner strategy. DigitalRoute delivers its solutions through both direct and partner channels. It offers the MediationZone platform through OEM agreements with partners such as SAP, Nokia Solutions and Networks (NSN), Comverse, Sigma Systems, Astellia, and NetCracker to name a few. It also provides solution capabilities through select systems integrators including Accenture, CapGemini, and Atos. This strategy has allowed DigitalRoute to provide mediation solutions to some of the largest CSPs in the world.

DigitalRoute believes its business strategy offers a number of key advantages. First, it allows the company to focus on delivering a "best of breed" mediation solution, with a lower cost of ownership and a shorter time to market than its competitors. Second, the DigitalRoute MediationZone platform offers users a higher degree of self-sufficiency, by the design of user control and configurability rather than relying on customizations provided by a DigitalRoute services team or a systems integrator. Third, DigitalRoute states that it receives deeper insight into the longer-term needs of the marketplace from direct interaction, not only through its customers but also from its OEM partners. Fourth, the use of MediationZone to satisfy business needs outside of billing has continued to expand over the past two years.

Stratecast views DigitalRoute as a major competitor within the global billing mediation market, because its approach differs from other suppliers and because its success is undeniable, based on the rapid rise in its total CSP customer base. The company reported it had 12 customers in 2003, more than 100 in 2008 and over 270 today. A large portion of the license and services revenue from DigitalRoute's technology offering, probably larger than DigitalRoute's own revenue, remains with its OEM partners due to DigitalRoute's go-to-market business model.

Stratecast believes DigitalRoute is well positioned in the marketplace today. It has earned a solid reputation among its partners and with many CSPs worldwide with its “can do” capabilities, using low cost hardware, without the help of any commercial database functionality. The MediationZone architecture, coupled with DigitalRoute’s OEM market strategy, is the major reason for the company’s ongoing business success.

DigitalRoute continues to be well-positioned to meet the changing needs of a communications marketplace that must now rely on automated data management functions to address a growing number of customer-centric business issues. Stratecast believes that DigitalRoute will continue to grow as it fills additional CSP needs in the traditional billing mediation domain and as it works closely with its partners to address related data transaction processing challenges in other business domains.

Key Benchmarking Criteria for the Technology Innovation Award

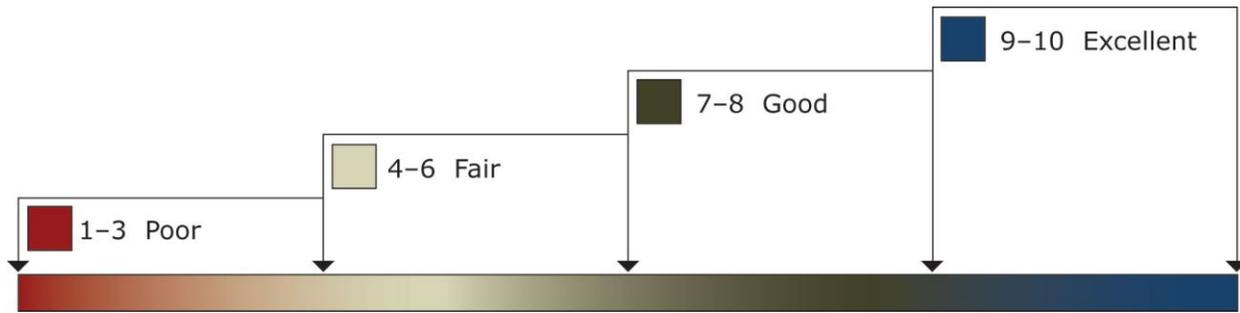
For the Technology Innovation Award, the following criteria were used to benchmark DigitalRoute’s performance against two key competitors:

- Uniqueness of the Technology
- Impact on New Products/Applications
- Impact on Functionality
- Impact on Customer Value
- Relevance of the Innovation to the Industry

Decision Support Matrix and Measurement Criteria

To support its evaluation of best practices across multiple business performance categories, Frost & Sullivan employs a customized Decision Support Matrix (DSM). The DSM is an analytical tool that compares companies’ performance relative to each other with an integration of quantitative and qualitative metrics. The DSM features criteria unique to each Award category and ranks importance by assigning weights to each criterion. The relative weighting reflects current market conditions and illustrates the associated importance of each criterion according to Frost & Sullivan. Fundamentally, each DSM is distinct for each market and Award category. The DSM allows our research and consulting teams to objectively analyze each company’s performance on each criterion relative to its top competitors and assign performance ratings on that basis. The DSM follows a 10-point scale that allows for nuances in performance evaluation; ratings guidelines are shown in Chart 1.

Chart 1: Performance-Based Ratings for Decision Support Matrix



This exercise encompasses all criteria, leading to a weighted average ranking of each company. Researchers can then easily identify the company with the highest ranking. As a final step, the research team confirms the veracity of the model by ensuring that small changes to the ratings for a specific criterion do not lead to a significant change in the overall relative rankings of the companies.

Chart 2: Frost & Sullivan’s 10-Step Process for Identifying Award Recipients



Best Practice Award Analysis for DigitalRoute

The Decision Support Matrix, shown in Chart 3, illustrates the relative importance of each criterion for the Technology Innovation Award and the ratings for each company under evaluation. To remain unbiased while also protecting the interests of the other organizations reviewed, we have chosen to refer to the other key players as Competitor #1 and Competitor #2.

Chart 3: Decision Support Matrix for Technology Innovation Award

<i>Measurement of 1-10 (1 = lowest; 10 = highest)</i>	Award Criteria					
	Uniqueness of Technology	Impact on New Products/Applications	Impact on Functionality	Impact on Customer Value	Relevance of Innovation to Industry	Weighted Rating
Relative Weight (%)	20%	20%	20%	20%	20%	100%
DigitalRoute	10	10	10	10	10	10
Competitor #1	8	9	9	8	6	8
Competitor #2	6	7	7	8	8	7

Before focusing on the technology innovations exhibited by DigitalRoute, Competitor #1 and Competitor #2, it is important to look at the similarities they share. These similarities are:

- All three companies offer online and off-line mediation functionality to the global CSP billing marketplace.
- The market opportunity for the mediation solutions each of these companies offer, continues to expand beyond just billing and into other OSS BSS functional areas.
- All three companies offer software-only solutions.
- All three companies have customers in all regions of the world.
- Each company has increased its revenues associated with mediation over the last six years and each has increased overall billing-related revenue as well.

Criterion 1: Uniqueness of the Technology

Billing mediation has been used for many decades, but the last decade has seen a dramatic rise in the importance of mediation to CSP billing functionality and corresponding growth in the billing mediation market. In the past, mediation primarily meant acquiring usage records from network elements after the fact—in a batch or off-line mode—and modifying this information for use by the billing engine. Information flowed in one direction; from the network to billing.

Today's mediation solutions operate in real time, often called online or real-time mediation, and information flows in both directions. Transaction volumes continue to increase

exponentially, requiring mediation of many billions of records per day. In addition to billing mediation, many CSPs are looking for mediation to solve problems beyond just billing, essentially connecting not just the network to billing, but moving towards “anything to anything”. These continuing advances in requirements for mediation have ensured that only the most technologically innovative solutions remain on top of the mediation revenue leader board.

DigitalRoute’s technology innovations in mediation with its MediationZone solution have been at the forefront of the industry. Often the first time that Stratecast is made aware of a new direction in mediation or a new requirements that are placed on the mediation function, come from our discussions with the company. Imitation is the sincerest form of flattery, as the saying goes, and many of DigitalRoute’s innovations are copied by its competitors. However, the uniqueness of its technology comes from always getting it to market first. Stratecast ranks DigitalRoute as Excellent in this category.

Criterion 2: Impact on New Products/Applications

Innovation in CSP billing mediation has been driven by continuing advances in CSP billing needs. As billing mediation advanced, it became apparent that mediation, and the technologies developed within mediation, could solve other problems within the billing domain and beyond. Technological innovation within billing mediation software design, enabled by the continuing reduction of hardware costs, has helped mediation suppliers deliver improvements within rating & charging and policy management, as well as in areas outside of billing such as revenue assurance and fraud management. In addition, mediation now plays a strategic role within the operations support solutions (OSS) domain to help meet the real-time needs now required by the latest mobile technologies.

DigitalRoute has expanded from a pure-play billing mediation supplier to a real-time data collection, aggregation, and correlation provider for any group of business functions. This is what DigitalRoute calls “horizontal mediation”. According to DigitalRoute, its CSP customers use its MediationZone solution for billing, policy control, data warehousing, reconciliation, fraud management, business analytics, service assurance and more. Stratecast ranks DigitalRoute as Excellent in this category.

Criterion 3: Impact on Functionality

Technology innovation within the billing mediation space goes hand in hand with functionality. When business needs required real-time billing, technology innovation drove previously batch-based offline billing mediation solutions to become real-time, online solutions. Mediation moved from uni-directional—from network to billing—to bi-directional, as functionality needs changed with new complex service offerings. Even the move to adjacent business areas outside of billing came about as technology innovation within CSP billing mediation opened the doors for this new functionality to serve in new areas.

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utilizing what it calls “horizontal mediation”. According to DigitalRoute, its CSP customers use its MediationZone solution for billing, policy control, data warehousing, reconciliation, fraud management, business analytics, service assurance and more. Stratecast ranks DigitalRoute as Excellent in this category.

Criterion 4: Impact on Customer Value

The business philosophy of DigitalRoute—which encompasses its innovations in technology and its competitive strategy—is quite different from its competitors. First, DigitalRoute has focused on mediation since its inception and even its recent expansion into policy control is built around its strength in the mediation space. The DigitalRoute business strategy is to stay focused on delivering mediation software. Both Competitor #1 and Competitor #2 focus on the entire billing domain, of which mediation is a key part. Second, DigitalRoute focuses on developing a product that is easy to implement and upgrade and therefore, on license sales, instead of “install with heavy services effort.”

The market focus of DigitalRoute has allowed the company to utilize an OEM-partner strategy. DigitalRoute delivers its solutions through both direct and partner channels. It offers the MediationZone platform through OEM agreements with partners and select system integrators. This strategy has allowed DigitalRoute to provide mediation solutions to some of the largest CSPs in the world, even though the company is quite small. DigitalRoute is one of very few companies in the mediation space, or any other part of the end-to-end CSP billing space, to effectively utilize an OEM partner strategy and to be so overwhelmingly accepted by all levels of the global communications service provider market.

DigitalRoute believes its business philosophy offers a number of key advantages. First, it allows the company to focus on delivering a “best-of-breed” mediation solution, with a lower cost of ownership and a shorter time to market than its competitors. Second, the DigitalRoute MediationZone platform offers users a higher degree of self-sufficiency by the design of user control and configurability rather than relying on customizations provided by a DigitalRoute services team or a systems integrator. Third, DigitalRoute states that it receives deeper insight into the longer-term needs of the marketplace from direct interaction not only through its customers but also from its OEM partners. DigitalRoute’s business philosophy, competitive strategy, and technology innovations are absolutely unique in the mediation space and have all had a direct impact on the value the company delivers to its customers. Stratecast ranks DigitalRoute as Excellent in this category.

Criterion 5: Relevance of the Innovation to the Industry

Innovation is important to a growing and quickly changing industry such as CSP billing, but the best measure of acceptance by the industry can be found in the market. How many customers are buying these solutions? How much revenue is generated by these solutions? Are customers and revenues increasing over time?

As stated earlier, all three competitors are revenue leaders within the global CSP billing mediation market. All have seen gains in both customers and revenue over the last four

years. As such, the best way to judge between them in this criterion is to examine the growth rates of each.

DigitalRoute reports it has had a rapid rise in its total CSP customer base over the last decade; it had 12 customers in 2003, more than 100 in 2008 and over 270 today. Its compound annual growth rate (CAGR) of its revenue generated in mediation from 2009 through 2012 exceeds 30 percent. In addition, a large portion of the license and services revenue from DigitalRoute's technology offering, probably larger than the company's own revenue, remains with its OEM partners due to DigitalRoute's go-to-market model. Stratecast ranks DigitalRoute as Excellent in this category.

Conclusion

DigitalRoute's technology innovations in mediation with its MediationZone solution have been at the forefront of the industry. Often the first time that Stratecast is made aware of new directions in mediation or new requirements that are placed on the mediation function come from our discussions with the company.

The business philosophy of DigitalRoute, which encompasses its innovations in technology and its competitive strategy, is quite different from its competitors. DigitalRoute has focused on mediation since its inception. DigitalRoute focuses on developing a product that is easy to implement and upgrade and therefore, on license sales, instead of "install with heavy services effort." The market focus of DigitalRoute has allowed the company to utilize an OEM-partner strategy. DigitalRoute delivers its solutions through both direct and partner channels. It offers the MediationZone platform through OEM agreements with partners and select system integrators. This strategy has allowed DigitalRoute to provide mediation solutions to some of the largest CSPs in the world, even though the company is quite small. DigitalRoute is one of very few companies in the mediation space, or any other part of the end-to-end CSP billing space, to effectively utilize an OEM partner strategy.

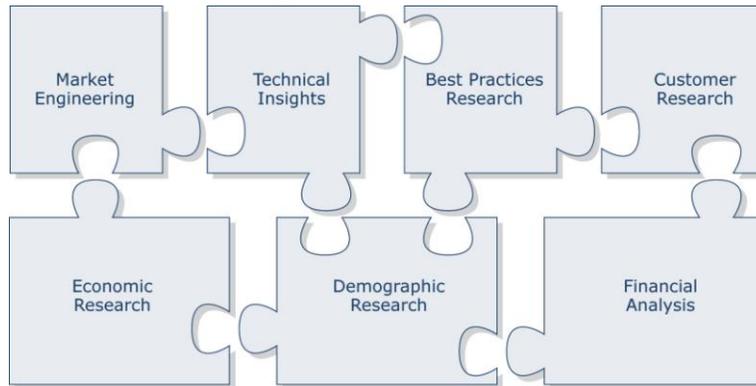
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Stratecast is proud to present the 2013 Stratecast Global Technology Innovation Award in CSP Billing for the Mediation market to DigitalRoute.

Critical Importance of TEAM Research

Frost & Sullivan's TEAM Research methodology represents the analytical rigor of our research process. It offers a 360-degree view of industry challenges, trends, and issues by integrating all seven of Frost & Sullivan's research methodologies. Our experience has shown over the years that companies too often make important growth decisions based on a narrow understanding of their environment, leading to errors of both omission and commission. Frost & Sullivan contends that successful growth strategies are founded on a thorough understanding of market, technical, economic, financial, customer, best practices, and demographic analyses. In that vein, the letters T, E, A and M reflect our core technical, economic, applied (financial and best practices) and market analyses. The integration of these research disciplines into the TEAM Research methodology provides an evaluation platform for benchmarking industry players and for creating high-potential growth strategies for our clients.

Chart 4: Benchmarking Performance with TEAM Research



About Stratecast

Stratecast collaborates with our clients to reach smart business decisions in the rapidly evolving and hyper-competitive Information and Communications Technology markets. Leveraging a mix of action-oriented subscription research and customized consulting engagements, Stratecast delivers knowledge and perspective that is only attainable through years of real-world experience in an industry where customers are collaborators; today's partners are tomorrow's competitors; and agility and innovation are essential elements for success. Contact your Stratecast Account Executive to engage our experience to assist you in attaining your growth objectives.

About Frost & Sullivan

Frost & Sullivan, the Growth Partnership Company, enables clients to accelerate growth and achieve best-in-class positions in growth, innovation and leadership. The company's Growth Partnership Service provides the CEO and the CEO's Growth Team with disciplined research and best-practice models to drive the generation, evaluation and implementation of powerful growth strategies. Frost & Sullivan leverages 50 years of experience in partnering with Global 1000 companies, emerging businesses and the investment community from more than 40 offices on six continents. To join our Growth Partnership, please visit <http://www.frost.com>.