CSg

2018 Global Stratecast CSP Monetization for Interconnect & Settlement Market Leadership Award

FROST & SULLIVAN

2018 BEST PRACTICES AWARD

GLOBAL STRATECAST CSP MONETIZATION FOR INTERCONNECT & SETTLEMENT MARKET LEADERSHIP AWARD

2018 BEST PRACTICES AWARDS

Contents

Background and Company Performance

Introduction

CSG has been among the leading suppliers of monetization solutions for the communications service provider (CSP) global market for many years. The company offers a full suite of monetization solutions; CSG's interconnect & settlement offerings are the focus of this award.

The monetization needs of today's complex services require an end-to-end, increasingly real-time business support process that involves interaction with various network technologies, computing capabilities, external partners, and suppliers. Shown in the figure below (with the focus of this award noted,) the end-to-end **Monetization** process consists of the following primary functions:

- **Data Collection and Management** capabilities including billing mediation and policy management (rules function)

- The **Monetization Engine** which includes rating & charging and other core billing

- **Wholesale Revenue Management** which includes the related but often separate interconnect & settlement and partner management functions
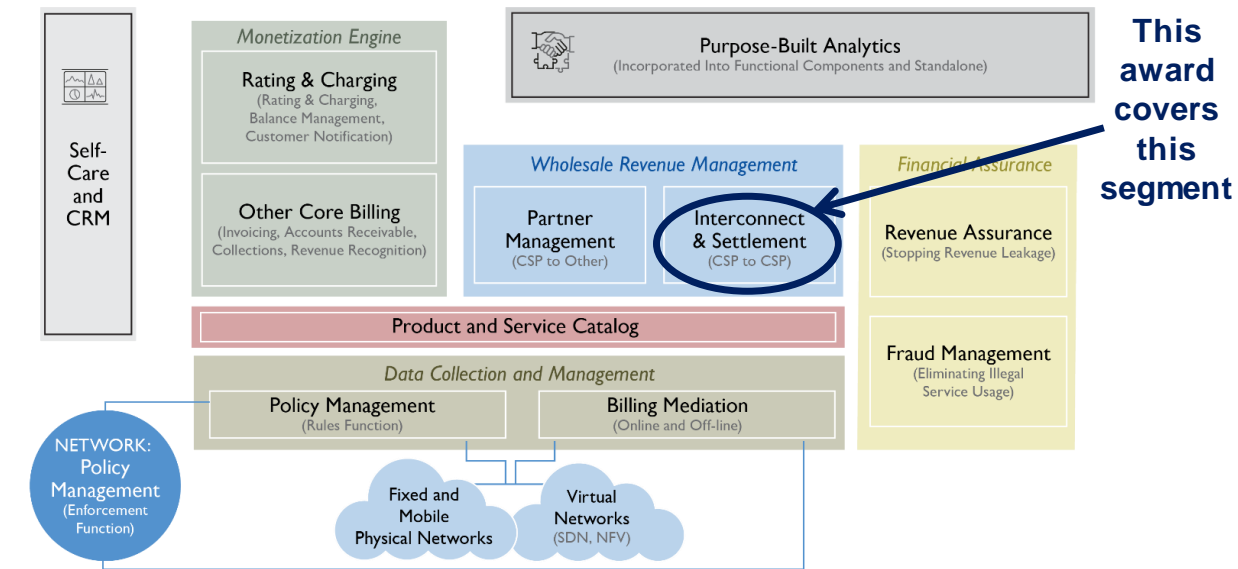
Source: Stratecast

There are additional functions shown in the above figure including:

- The CSP financial assurance functions which assure the monetization functions and include revenue assurance and fraud management. While related to monetization, Stratecast considers the CSP financial assurance functions to be a separate market from the overall end-to-end CSP monetization market.

- Analytics, in particular what Stratecast refers to as purpose-built analytics, are now

included within each of the monetization process segments and within each of the financial assurance segments. In addition, there are cases where analytics are standalone, but for the purposes of this market assessment, all revenue from analytics is included in one or more segments.

- Policy management consists of a rules function, which Stratecast includes as part of monetization; and an enforcement function, which Stratecast views as network capabilities mostly beyond the scope of the monetization processes.

- Customer relationship management (CRM) has long been adjacent to the CSP monetization function. Self-care is a function that has risen in importance in recent years, to allow end-customers to directly address basic service and experience needs. Stratecast delineates a lite version of self-care, designed to better facilitate pricing changes or customer-selectable usage options, as an other core billing function. Advanced CRM and omni-channel customer experience solutions, on the other hand, are outside our definition of the end-to-end monetization process.

- Product and service catalogs are an integral part of a CSP monetization system, yet, do not neatly fit with any of the defined segments. These catalogs describe what defines a product or a service, from both an internal and partner-provided component perspective; what the role is of each sub-system in relation to the product or service; and they define how to monetize each product or service. In our analysis, product and service catalogs are counted as part of the other core billing segment.

The Stratecast Operations, Orchestration, Data Analytics & Monetization (ODAM)[1] analyst team has completed its annual assessment of the CSP monetization solution supplier market and the CSP financial assurance supplier market. The recently released Stratecast report—OSSCS 19-05, *Global CSP Monetization and Financial Assurance 2018 Edition: Market Drivers, Forecast, Market Share, and Requirements Analysis*, August 2018—forms the research basis for this award.

What is Interconnect & Settlement?

Wholesale revenue management includes interconnect & settlement and partner management, as show in the figure to the right. The interconnect & settlement segment of CSP monetization emerged nearly 30 years ago, to address the transport of fixed-line voice calls from one carrier's network to another. It has evolved to handle new services including mobile voice, mobile roaming, text messaging, and data services. There is a range of functionality included within the interconnect & settlement definition.

Wholesale Revenue Management

| Partner Management (CSP to Other) | Interconnect & Settlement (CSP to CSP) |

---
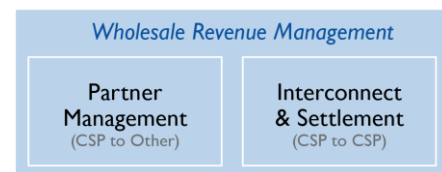
[1] Stratecast views ODAM as the logical evolution of OSS and BSS, as described in the *About ODAM* section on the last page of this award.

Shown in the figure below, the primary components of interconnect & settlement are:

- **Interconnect Monetization & Settlement** – Interconnect is broadly defined as a carrier-to-carrier wholesale agreement for handling a voice or data connection from one operator by another, when the terminating point of the connection falls outside the original operator's network. Settlement addresses the financial aspects of these transactions; for example, how much does Carrier A owe Carrier B for transporting and delivering its traffic? How much does Carrier B owe Carrier A? The amounts charged or owed in the forward direction do not always equate to the reverse direction, due primarily to traffic patterns and rate agreements. A settlement payment is usually initiated on a 30-day cycle between CSPs, often using a financial clearinghouse supplier to complete the settlement process.

Roaming Monetization & Settlement	Interconnect Monetization & Settlement	CABS Monetization & Settlement
Routing Optimization & Margin Management	Agreement Exchange & Management	
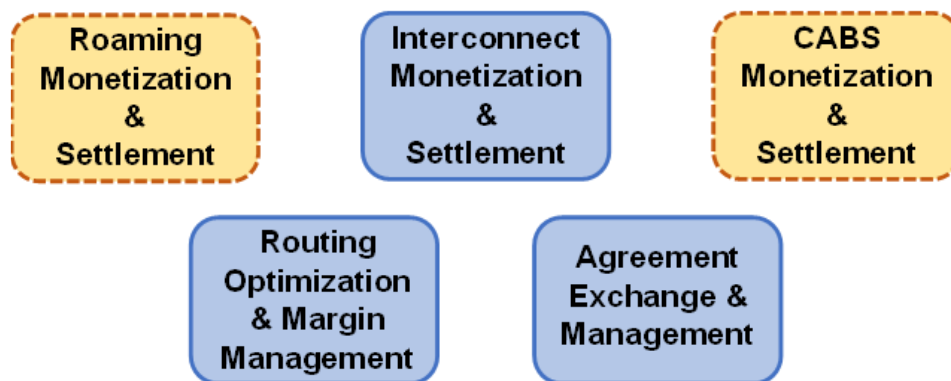
Source: Stratecast

- **Routing Optimization & Margin Management** – Routing describes how to get traffic from point A to point B. In many cases, there may be many different routes, and those routes may vary in cost, as well as in capacity and in quality. With quickly changing business terms and prices, routing optimization becomes important for CSPs to maintain or improve their wholesale margins.

- **Agreement Exchange & Management** – An interconnect agreement defines the business and technical terms with which a carrier accepts and transports such connections. While the technical terms of the interconnect agreement likely change very infrequently, the business terms may change quite often, even daily. For example, a CSP may have excess capacity on its network, and lower prices to fill that capacity; or lack capacity and raise prices.

  This process would be relatively simple if a CSP had to maintain agreements with only a few other carriers. But in today's global economy, providers must maintain interconnect agreements with thousands of global carriers; and, more recently, with large enterprises that purchase significant amounts of wholesale capacity. With frequent changes to the business terms, agreement exchange & management becomes a key capability.

- **Roaming Monetization & Settlement** – Mobile roaming has become standardized over the years, and most CSPs utilize a standard clearinghouse

settlement process for at least a portion of their roaming traffic. However, CSPs often handle their most profitable arrangements in-house, using a roaming monetization & settlement solution. This is a specialization of the general interconnect monetization & settlement solution designed to address the usage needs of a carrier's customers that temporarily use the capabilities of another carrier during travel outside their home network.

- **CABS Monetization & Settlement** – A Carrier Access Billing System (CABS) is also a specialization of the general interconnect solution, which applies mostly to US-based CSPs, and has been in operation for over three decades. CABS is an automated process for exchanging wholesale network usage records between network carriers; for example, large network carriers and smaller regional carriers. CABS includes the number of terminations and duration of voice-centric connections done by one carrier for traffic delivered to it from another. Settlement occurs from the application of contract rates per billable unit to all summarized usage values. The CABS standard began with breakup of the original AT&T into Regional Bell Operating Companies, in the early 1980s.

Industry Challenges

Wholesale Revenue Management of Things

As the Internet of Things (IoT) continues to gain solution focus for all industries, so do the interconnect needs of IoT. For example, messages sent from a "machine level" device in one country to a data center located in another—such as 30-second status messages from a smart electrical meter, indicating operability and physical location status—should not have the same management definitions, financial, and regulatory obligations as for human-to-human voice and text messages. As a result, the need for more flexibility and new ways to address accountability will continue to drive business growth in this otherwise stable market.

Wholesale Fraud Management

A new source of interconnect is tied to network transport agreements involving the wholesale delivery of content partner service capabilities for inclusion in complex CSP service offerings. In this case, systematic usage monitoring of partner-supplied apps or services is essential for maintaining relationship integrity. Failure of proper usage accountability on either the partner's side or the CSP's side, strains business relationships and casts doubt on future working opportunities.

Another need is tied to the manner in which interconnect agreements have been defined in the past, as new over-the-top (OTT) services such as voice over IP (VoIP), and VoIP within an embedded application continue to gain consumer preference. Some of these services can easily fall outside the more traditional agreement limits, as "wholesale fraud" becomes an increasingly important business challenge for partners and CSPs alike.

Wholesale Partner Connectivity Management

Another need involves application programming interface (API) connectivity between partners. This API-to-API association can be facilitated through a partner-focused orchestration platform provided by a CSP; or it could be provided by other suppliers within the global communications marketplace. This business challenge is focused on API usage and not necessarily the content that may stream across a connection.

Global CSP Monetization - Interconnect & Settlement Market Share Analysis

The source report for this award[2] provides a market share analysis for the end-to-end CSP monetization market, utilizing a base year of 2017. As in previous Stratecast forecasts, this analysis is based on the sum of revenue generated by supplier offerings in six related global monetization segments. The report also provides market share assessments for each of these monetization segments, which include:

- Billing Mediation

- Rating & Charging

- Other Core Billing functions

- Policy Management (Rules Function)

- **Interconnect & Settlement (subject of this award)**

- Partner Management

The findings, as published in this report, show that CSG leads in market share for the interconnect & settlement segment. In this market, Stratecast believes that CSG addresses approximately 18% of the market based on revenue. The next four competitors address approximately 16%, 14%, 10%, and 7% of the market respectively by revenue. This is shown in the figure below.

Stratecast interviewed more than 110 monetization suppliers that address one or more of the above-mentioned market segments. Stratecast revenue estimates include vendors with software solution offerings that obtain revenues from license fees, maintenance fees, services associated with the initial installation and configuration of a solution, service bureau fees, cloud services fees, and installed solutions managed by a supplier. Internal CSP spending attributed to internal work teams or assistance from professional services consulting resources is not included. In addition, hardware-related revenue and revenue generated by systems integrators or companies without their own monetization solutions are not included. The professional services fees for integration of new solutions with

---

[2] See Stratecast report Stratecast report OSSCS 19-05, *Global CSP Monetization and Financial Assurance 2018 Edition: Market Drivers, Forecast, Market Share, and Requirements Analysis*, August 2018

existing systems, and updates to CSP business processes are also not included in the forecast.

All revenue forecasts are developed by analyzing multiple sources including information supplied to Stratecast through a market questionnaire, information from public sources, direct interviews, and raw market data. The analysis was developed from 2017 company-level revenues, projections of future earnings, global financial market insights, as available, and our strategic acumen concerning monetization functions, including interconnect & settlement.
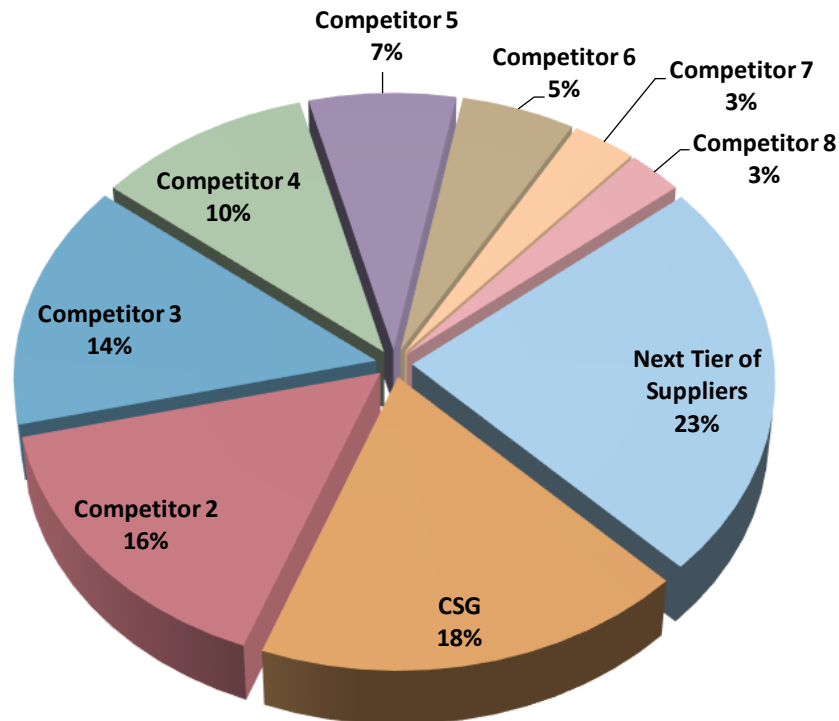
Source: Stratecast

To obtain estimated revenues for this five-year market forecast, Stratecast used a modified Delphi method for revenue analysis. Factors such as known deployments, publicly and privately reported revenue, customers served, press releases, financial reports, and related information were analyzed by a multi-person analyst team, each working independently, to estimate each vendor's 2017 revenues, where such was not specifically provided. Final estimates were iterated to reach a consensus using a 90% confidence interval. From the base year level, the five-year forecast was established using insights about specific company directions, events, customer comments, general business insight, global economic indicators, and our strategic insight concerning each of the six monetization segments, as well as the overall global CSP end-to-end monetization market.

CSG Profile

Based in Greenwood Village, Colorado, CSG is a business support solutions and services provider addressing the global CSP marketplace and other vertical industries including financial services, insurance, government, transportation, and telematics. It is publicly traded on NASDAQ under the symbol CSGS. The company generated revenue of approximately $790 million in 2017. CSG employs approximately 3,400 people worldwide.

The company offers solutions in all segments of CSP monetization, which comes from three separate solution sets. First, the company's monetization solution in support of cable and satellite is **CSG Advanced Convergent Platform (ACP)**. **ACP** primarily falls under the monetization segments of rating & charging and other core billing, with some partner management capabilities. Next, comes the company's **CSG Total Service Mediation (TSM) / Singleview / Wholesale Business Management Solutions (WBMS)** offerings. For interconnect & settlement and partner management, the company offers the **WBMS** suite. The company's remaining solution set is **CSG Ascendon, fully cloud-based, SaaS monetization offering**, which builds upon CSG foundational technology.

Interconnect & Settlement, Partner Management

For interconnect & settlement and partner management, the company offers the **WBMS** suite, shown in the figure below. **WBMS** centrally manages wholesale rates and bilateral agreements, optimizes traffic trading and routing, collects and processes events in near real-time, calculates bills, generates invoices, reconciles with partners, and monitors business performance. As CSG reported to Stratecast, **WBMS** enables operators to improve the accuracy and efficiency of their wholesale business processes while lowering the cost of ownership. The company reports that over 350 global CSPs utilize WBMS in support of interconnect & settlement and partner management needs.

Source: CSG

WBMS comprises a set of integrated products and services that can be combined to support strategically vital business functions, and includes:

- **Route** supports inter-carrier traffic routing and trading. CSG reports that the solution provides optimized and automated routing of international calls, and recognizes cost, quality, and other variables critical to call routing and capacity trading.

- **Interconnect** provides billing, financial management, disputes reconciliation, settlement, and partner management capabilities in support of traditional carrier-to-carrier interconnect & settlement; as well as supporting carrier-to-other-partner interactions.

- **Roaming** provides rating and settlement, financial management, encoding, and decoding of roaming data, contract management, and reference data management in support of both inbound and outbound roaming traffic. The solution supports industry standards such as TAP, RAP and NRTRDE.

- **Assure** validates calls from and to the home network, addressing fraud and assuring international call quality.

- **Exchange** provides document exchange capabilities, which are key for the business relationships in interconnect & settlement and partner management scenarios.

- **WBMS SaaS** is a cloud-based settlement and partner management solution, for all WBMS components, available in public or private Cloud. CSG also offers full managed services as a further add-on option.

Stratecast Insights

CSG continues to have a solid base with its strong position in the North American cable market through use of its **ACP** billing solution. The company has also seen success in the mediation market with its **TSM** solution and within the general monetization market with **Singleview**.

CSG's customer base with its **WBMS** solution—over 350 global CSPs—is the highest that Stratecast has noted within the interconnection market. CSG has evolved the strengths of its **TSM/Singleview/WBMS** solutions into its latest solution offering; **Ascendon**. This fully cloud-based monetization offering focuses on digital transformation, coming into the market when both cloud and digital transformation are top of mind for most global CSPs.

For the 2018 Stratecast global CSP monetization supplier assessment, CSG with its WBMS solution, was determined to be the market share leader by revenue in the interconnect & settlement market. With CSG's strong understanding of current interconnection market needs, Stratecast expects that CSG will continue to gain market attention in the months ahead.

CSG's Market Leadership

The **2018 Stratecast Global Market Leadership Award in CSP Monetization for the Interconnect & Settlement Market** is judged based on 10 criteria described later in this document. The following details a selection of the comparisons from the 10 criteria. The data behind the comparisons comes from Stratecast report: OSSCS 19-05, *Global CSP Monetization and Financial Assurance 2018 Edition: Market Drivers, Forecast, Market Share, and Requirements Analysis*, August 2018.

Growth Strategy Excellence

Stratecast assesses the end-to-end CSP monetization market every year, which involves over 110 suppliers of monetization solution functionality. This market, and all of its components, have each grown over the last decade with some segments growing faster than others. Of the six major segments composing the global CSP end-to-end monetization market, interconnect & settlement is the smallest and one of the slower growing ones. While the interconnect & settlement segment is well established, it continues to grow, albeit slowly, as the wholesale market continues to be a stable revenue source for CSPs globally.

In the expanding CSP monetization market, solution supplier growth is essential to maintain a company's market position. CSG continues to grow it's interconnect & settlement revenue year after year, primarily from organic growth, though CSG acquired Ascade about five years ago, which is now part of the CSG **WBMS** solution.

Stratecast has also noted a rise in the number of CSG's reported wholesale revenue management customers. Five years ago, CSG stated it had about 300 CSP customers using its **WBMS** solution, whereas today the number is closer to 400. Not only is CSG able to acquire new customers, the company is maintaining its existing customer base.

Stratecast believes that CSG now controls 18% of the global interconnect & settlement market, and expects that market share to continue to inch up in the months ahead.

Implementation Excellence

Stratecast recognizes that to be a leader in CSP monetization, in an individual segment of CSP monetization, or in any of the areas of CSP ODAM, a supplier must be able to implement the solutions they have sold; each and every time. An implementation that does not go according to plan, or that is poorly executed due to a lack of expertise or failure to properly account for critical contingencies, can cause a CSP to lose trust in a supplier. An implementation that fails can have reverberations for a supplier far beyond the individual customer involved. The CSP community (and analyst community) is relatively small and less than expected results are noted throughout the industry, sometimes for an extended time.

Stratecast's knowledge of the excellence in implementation with regard to CSG is well founded based on several customer testimonials, continued press from CSG that identifies

CSPs by name, and the ongoing discussions Stratecast has with both CSG and its competitors. As noted above, specifically for its interconnect solution **WBMS**, CSG now identifies over 400 CSP customers, whereas just a few years ago the number was considerably lower. Together, this indicates that CSG is keeping its existing customers happy as it continues to gain new ones.

Brand Strength

Brand is often of great importance to a customer when choosing a product for purchase. This is true of consumer goods and it holds for CSPs when they choose their ODAM systems with price tags that usually reach into the millions of dollars. In the area of CSP end-to-end monetization, CSPs trust their ability to generate revenue, and even in their ability to stay in business, on a vendor—trust in a company and in a brand is of utmost importance.

Stratecast is certain increasing revenues correlate strongly with CSP brand trust. CSG increased its wholesale management revenue during 2017 and therefore its brand strength since Stratecast's previous assessment of the CSP monetization market. This occurred at both the overall monetization market level, and within the interconnect & settlement segment.

Product Quality

Like the previous two criteria, product quality is very important to CSPs, who expect any solution they purchase to not only work as promised, but to meet their specific business needs within the timeframe of delivery they agree to with the software supplier. Poor quality solutions immediately cause issues with the CSP customer and, as mentioned under the implementation section of this report, bad news travels fast, which is hard to overcome within the communications marketplace. Stratecast is certain revenue growth indicates that CSP customers continue to put trust in a supplier, the quality of their products, and in the supplier's ability to satisfy all needed business change needs in order for the new solution to operate effectively.

CSG's continued growth over the last few years, particularly with its **WBMS** solution, is a strong indication that CSP customers find the company's products and solution delivery capabilities to either meet or exceed their expectations.

Product Differentiation

During our 2018 monetization market assessment, Stratecast identified nearly 65 suppliers that offer some form of interconnect & settlement functionality. There are five different parts of the interconnect & settlement functional domain. And, as the CSG profile describes earlier in this award, CSG covers all five segments—one of a select number of suppliers that can address all the business management needs of the complex interconnect & settlement market.

In addition to delivering the broad coverage that the interconnect & settlement market demands, CSG continues to have a strong roadmap of future additions to its **WBMS**

product suite. This roadmap is driven by both its customer base—which keeps existing customers satisfied—but also through participation with industry standards and forums. In addition, CSG also offers **WBMS SaaS**, a cloud-based interconnect & settlement solution, further increasing its product differentiation.

Technology Leverage

The points described within the *Product Differentiation* section above, also apply to the Technology Leverage criterion. By covering all parts of the interconnect & settlement market, CSG can leverage its breadth of offering to win customers from suppliers that only offer capabilities that address one or two of the five segments of interconnect & settlement.

By continuing to invest in its **WBMS** product suite based on existing customer feedback, the suite becomes stronger, and CSG leverages that technology strength to win new customers.

Conclusion

Stratecast recently completed its annual assessment of the end-to-end global CSP monetization market. We specifically evaluated the role of monetization within the CSP business environs. In so doing, Stratecast reached out to and analyzed insights from over 110 suppliers, covering various aspects of the end-to-end CSP monetization marketplace. Stratecast defines CSP monetization to include six related segments: billing mediation; rating & charging; other core billing functionality; policy management (rules function); interconnect & settlement; and partner management.

Stratecast analysis of the global end-to-end CSP monetization market revealed that CSG leads in market share for the interconnect & settlement sector based on 2017 supplier revenue. Stratecast analysis also concludes that CSG presently addresses approximately 18% of the interconnect & settlement market by earned revenue.

In recognition of CSG's superior ability to lead in global market share for the interconnection & settlement market and to address communications service provider's key challenges, Stratecast awards the 2018 Stratecast Global Market Leadership Award in CSP Monetization for the Interconnect & Settlement Market to CSG.

Significance of Market Leadership

Ultimately, growth in any organization depends upon customers purchasing from a company, and then making the decision to return time and again. Loyal customers become brand advocates; brand advocates recruit new customers; the company grows; and then it attains market leadership. To achieve and maintain market leadership, an organization must strive to be best-in-class in three key areas: understanding demand, nurturing the brand, and differentiating from the competition. This three-fold approach to delivering market leadership is explored further below.

- Increase renewal rates
- Increase upsell rates
- Generate awareness and interest
- Demonstrate customer value
- Grow the business

- Improve customer loyalty rates
- Establish strong brand identity
- Strengthen the brand's reputation
- Inspire customers
- Be recognized for value

DEMAND

BRAND

Market Leadership

COMPETITIVE POSITIONING

- Clarify positioning
- Focus on unique selling points
- Deliver superior value to customers
- Get ahead of the competition
- Implement growth strategy successfully

Understanding Market Leadership

As discussed on the previous page, driving demand, strengthening the brand, and differentiating from the competition all play a critical role in a company's path to market leadership. This three-fold focus, however, is only the beginning of the journey and must be complemented by an equally rigorous focus on the customer experience. Best-practice organizations, therefore, commit to the customer at each stage of the buying cycle and continue to nurture the relationship once the customer has made a purchase. In this way,

they build a loyal, ever-growing customer base and methodically add to their market share over time.

Key Performance Criteria

For the Market Leadership Award, we focused on specific criteria to determine the areas of performance excellence that led to the company's leadership position. The criteria we considered include (although not limited to) the following:

Criterion: Growth Strategy Excellence
Requirement: Demonstrated ability to consistently identify, prioritize, and pursue emerging growth opportunities

Criterion: Implementation Excellence
Requirement: Processes support the efficient and consistent implementation of tactics designed to support the strategy

Criterion: Brand Strength
Requirement: The possession of a brand that is respected, recognized, and remembered

Criterion: Product Quality
Requirement: The product or service receives high marks for performance, functionality, and reliability at every stage of the life cycle

Criterion: Product Differentiation
Requirement: The product or service has carved out a market niche, whether based on price, quality, or uniqueness of offering (or some combination of the three) that another company cannot easily duplicate

Criterion: Technology Leverage
Requirement: Demonstrated commitment to incorporating leading-edge technologies into product offerings, for greater product performance and value

Criterion: Price/Performance Value
Requirement: Products or services offer the best value for the price, compared to similar offerings in the market

Criterion: Customer Purchase Experience
Requirement: Customers feel they are buying the most optimal solution that addresses both their unique needs and their unique constraints

Criterion: Customer Ownership Experience
Requirement: Customers are proud to own the company's product or service, and have a positive experience throughout the life of the product or service

Criterion: Customer Service Experience
Requirement: Customer service is accessible, fast, stress-free, and of high quality

Best Practices Recognition: 10 Steps to Researching, Identifying, and Recognizing Best Practices

Stratecast | Frost & Sullivan Awards follow a 10-step process to evaluate award candidates and assess their fit with select best practice criteria. The reputation and integrity of the Awards are based on close adherence to this process.

STEP		OBJECTIVE	KEY ACTIVITIES	OUTPUT
1	**Monitor, target, and screen**	Identify Award recipient candidates from around the globe	• Conduct in-depth industry research • Identify emerging sectors • Scan multiple geographies	Pipeline of candidates who potentially meet all best-practice criteria
2	**Perform 360-degree research**	Perform comprehensive, 360-degree research on all candidates in the pipeline	• Interview thought leaders and industry practitioners • Assess candidates' fit with best-practice criteria • Rank all candidates	Matrix positioning of all candidates' performance relative to one another
3	**Invite thought leadership in best practices**	Perform in-depth examination of all candidates	• Confirm best-practice criteria • Examine eligibility of all candidates • Identify any information gaps	Detailed profiles of all ranked candidates
4	**Initiate research director review**	Conduct an unbiased evaluation of all candidate profiles	• Brainstorm ranking options • Invite multiple perspectives on candidates' performance • Update candidate profiles	Final prioritization of all eligible candidates and companion best-practice positioning paper
5	**Assemble panel of industry experts**	Present findings to an expert panel of industry thought leaders	• Share findings • Strengthen cases for candidate eligibility • Prioritize candidates	Refined list of prioritized Award candidates
6	**Conduct global industry review**	Build consensus on Award candidates' eligibility	• Hold global team meeting to review all candidates • Pressure-test fit with criteria • Confirm inclusion of all eligible candidates	Final list of eligible Award candidates, representing success stories worldwide
7	**Perform quality check**	Develop official Award consideration materials	• Perform final performance benchmarking activities • Write nominations • Perform quality review	High-quality, accurate, and creative presentation of nominees' successes
8	**Reconnect with panel of industry experts**	Finalize the selection of the best-practice Award recipient	• Review analysis with panel • Build consensus • Select recipient	Decision on which company performs best against all best-practice criteria
9	**Communicate recognition**	Inform Award recipient of Award recognition	• Inspire the organization for continued success • Celebrate the recipient's performance	Announcement of Award and plan for how recipient can use the Award to enhance the brand
10	**Take strategic action**	Upon licensing, company is able to share Award news with stakeholders and customers	• Coordinate media outreach • Design a marketing plan • Assess Award's role in future strategic planning	Widespread awareness of recipient's Award status among investors, media personnel, and employees

The Intersection between 360-Degree Research and Best Practices Awards

Research Methodology

Stratecast | Frost & Sullivan's 360-degree 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 Stratecast | Frost & Sullivan's research methodologies. Too often companies make important growth decisions based on a narrow understanding of their environment, leading to errors of both omission and commission. Successful growth strategies are founded on a thorough understanding of market, technical, economic, financial, customer, best practices, and demographic analyses. The integration of these research disciplines into the 360-degree research methodology provides an evaluation platform for benchmarking industry participants and for identifying those performing at best-in-class levels.

360-DEGREE RESEARCH: SEEING ORDER IN THE CHAOS

About ODAM

The processes and tools that communications service providers (CSPs) have utilized to run their businesses have changed over time. More than a half-century ago, CSP network and business management processes were manual (OAM&P). As CSPs evolved over the years, so did the operations support systems (OSS) and business support systems (BSS) that address CSP business and network management needs. In recent years, the lines between OSS and BSS have become less clear, with much overlap. In addition, the roles in which OSS and BSS operate have expanded beyond traditional boundaries. As such, Stratecast now uses the term Operations, Orchestration, Data Analytics & Monetization (ODAM) to encompass both the traditional OSS and BSS functions and the new areas in which business and operations management must now work together, including virtualized networks and telecom data analysis.

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 more than 50 years of experience in partnering with Global 1000 companies, emerging businesses, and the investment community from 45 offices on six continents. To join our Growth Partnership, please visit http://www.frost.com.