



2018 Global Nano-satellites  
Company of the Year Award

FROST & SULLIVAN

2018

BEST  
PRACTICES  
AWARD

GLOBAL NANO-SATELLITES  
COMPANY OF THE YEAR AWARD

2018  
BEST PRACTICES  
AWARDS

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## Background and Company Performance

### *Industry Challenges*

Frost & Sullivan's research indicates that the space industry is observing internal conflict from small-satellites (less than 500 kilograms) and the related launch services market. Simultaneously, the space industry is looking to feed into the digital transformation of every industry—directly or indirectly. For example, remote connectivity services from small-satellite operators are looking to revolutionize the Internet of Things (IoT) domain, which in turn, touches the digital transformation trends across every other industry segment around the globe.<sup>1</sup>

By 2020, new remote connectivity services will enable all the connectivity Mega Trends to attain realization by 2025, driving automation to the next level across industries. By 2030, over 13,000 satellites will launch, more than 60 new players will enter the upstream market, and over 130 players will be in the downstream market. Space will be busy like it never was.<sup>2</sup>

Currently, primary connectivity services are based on geostationary (GEO) satellites. These connectivity services do not have satellites moving in and out of coverage for any given location within their respective coverage areas. However, a satellite constellation-based connectivity service that can deliver its capability through existing downstream infrastructure, as well as directly to mobile/cellular devices, is yet to be realized in the consumer segment for connectivity services. The ideal solution will be a low Earth orbit (LEO)-based satellite constellation with reliable inter-connections that can deliver uninterrupted connectivity services irrespective of which satellite the user connects.

Frost & Sullivan believes that utilizing the small-satellite form factor will enable low-cost space asset realization that, in turn, will allow the financial feasibility of affordable connectivity services to remote locations in a reliable manner.

### *Visionary Innovation & Performance and Customer Impact*

Sky and Space Global (SAS) is the first company to deploy three communication nano-satellites [weighing 1 to 10 kilograms (kg)]. The three nano-satellites each weigh three kg and fly in a formation enabled by SAS's differential drag formation flying and by intra-satellite communications technology. The three nano-satellites are the first of ~200 that SAS plans to deploy by 2020, thereby enabling round the clock coverage in an area stretching plus or minus 15 degrees from the equator. To achieve this goal SAS is evolving and developing internal proprietary capability, as well as challenging its subcontractors to grow as well to keep up with the company's ambitious target.

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<sup>1</sup> The Future of Space, 2030 and Beyond (Frost & Sullivan Jan 2018)

<sup>2</sup> The Future of Space, 2030 and Beyond (Frost & Sullivan Jan 2018)

## An Impressive Number of World Firsts

SAS has met every milestone that it set before launching the satellites, thereby amassing a significant number of world firsts; including, but not limited to, launching three fully operational nano-satellites in space. SAS is the first company to provide nano-satellite communication services, and with the three flying in a formation, it constitutes a small but valid communication network in space. Additional nano-satellite firsts for SAS include:

- Inter-satellite communication
- Transfer of data, images, and phone calls—the first financial transaction over nano-satellite
- Connection to the global phone network system
- Flying in a formation without any propulsion relying only on the differential drag
- Cyber-security protection

SAS is developing tools such as a system simulator to mimic an entire network of 200 satellites and millions of users using the system at the same time across the equatorial region. Insights generated in the simulator will integrate into SAS proprietary network management software, which will among other tasks ensure that the constellation maintains a specific distance from each other to provide the coverage SAS promises its clients.

## Unrivalled Capabilities

The new and cost-effective communication methods opened up by SAS nano-satellites are generating new downstream applications such as enabling financial transactions via virtual wallets on mobile phones. Nigerian mobile payments start-up BeepTool, which provides money transfer services to smartphones via its application (app) in 2017, signed a five-year contract with SAS to bring messaging and payment services to its users. BeepTool integrates with the SAS system through its app Chatellite, (a combination of words: chat, and satellite); this integrated network enables users to execute financial transactions when they are out of coverage from conventional terrestrial networks. The SAS connectivity from its 3-Diamonds enables the seamless operation of companies such as BeepTool, and this will enable the users in remote locations to enjoy the benefits of electronic financial transactions.

The successful transaction demonstrated that SAS could integrate other financial service providers' apps with their system and thereby open up the possibility of adding additional providers. The integration possibilities are not limited to financial service providers, if Facebook were to sign an agreement and have their software integrated with SAS, then Facebook's users could use Facebook Messenger via SAS satellites if their telecommunication providers have signed an agreement.

Although, sending messages or making payments is technically challenging, the service is not latency sensitive to the same degree as a phone call, where the user would immediately notice a delay. Therefore, SAS integration to the global phone network formally known as the public switched telephone network proves SAS's ability to overcome significant technological hurdles. The company can make a phone call from any landline in the world to any SAS global user connected via satellite and vice versa.

SAS turned to Israeli cyber-security provider CheckPoint, to integrate its cyber-security solutions onto SAS's system as an early stage, precautionary measure to prepare for future developments. Notably, despite this built-in security, payment and telecommunication providers will be responsible for the cyber-security of the information transmitting via SAS's constellation.

### **Industry Transforming Impact**

In addition to the financial services and communications markets, SAS targets the IoT and machine-to-machine (M2M) market, and in the last two years, the company witnessed significant developments in the rapidly growing market with some potential customers in the company's pipeline. SAS believes that while some satellite service providers focus on the IoT market, today, none of them have proven that they can deliver on their promises. SAS hopes to gain market share in the IoT space given its success at facilitating phone calls via its nano-satellites.

With the growing number of satellites in space, large operators frequently accuse smaller satellite operators of interfering with their operations. SAS faced a concern regarding a suspected 'signal interference' with an existing satellite operator's operations. However, SAS used its signal intelligence (SIG-INT) capabilities to provide evidence that its signal did not cause the interference and also enabled an investigation to identify the actual interference source. SAS detected the source by making minor changes to its system, and since the source of the interference laid outside SAS's area of operation, the SIG-INT operation did not interfere with SAS's normal operations—a crucial capability since it both freed SAS from any suspicion and enables it to bust the "myth of interference."

To keep pace with its target of establishing a constellation, in March 2017, SAS signed a contract with the nano-satellite manufacturer and supplier, GomSpace, to produce more than 200 nanosatellites. SAS expects that the first batch will launch in 2019 and by the end of 2020 the entire constellation will be operational. To accommodate the needs of SAS, GomSpace is establishing a separate production line so that a new batch of 25 satellites will be ready for launch every two to three months. The new production line will operate according to the serial production established by the automotive industry and signals a significant advancement in satellite manufacturing, showcasing how SAS is changing the industry at large.

The batches will deploy with SAS's original launch partners Virgin orbit with whom SAS signed a contract in September 2016, and China Great Wall Industry Corporation, with whom SAS signed an MOU in July 2018.

### *Conclusion*

Today's modern world relies on an uninterrupted flow of data to keep moving, and nano-satellites are a fundamental part of a global communications network. Sky and Space Global's technical and managerial know-how has generated a long list of firsts, including but not limited to the first deployment of communication nano-satellites, financial transactions, and cyber-security integrations. Sky and Space Global is not just ahead of the curve; the company is leading the nano-satellite pack.

With industry leading and defining capabilities, Sky and Space Global earns Frost & Sullivan's 2018 Company of the Year Award in the global nano-satellite market.

## Significance of Company of the Year

To receive the Company of the Year Award (i.e., to be recognized as a leader not only in your industry, but among your non-industry peers as well) requires a company to demonstrate excellence in growth, innovation, and leadership. This kind of excellence typically translates into superior performance in three key areas: demand generation, brand development, and competitive positioning. These areas serve as the foundation of a company's future success and prepare it to deliver on the two criteria that define the Company of the Year Award (Visionary Innovation & Performance and Customer Impact).



## Understanding Company of the Year

As discussed above, driving demand, brand strength, and competitive differentiation all play a critical role in delivering unique value to customers. This three-fold focus, however, must ideally be complemented by an equally rigorous focus on Visionary Innovation & Performance to enhance Customer Impact.

## *Key Benchmarking Criteria*

For the Company of the Year Award, Frost & Sullivan analysts independently evaluated two key factors—Visionary Innovation & Performance and Customer Impact—according to the criteria identified below.

### **Visionary Innovation & Performance**

- Criterion 1: Addressing Unmet Needs
- Criterion 2: Visionary Scenarios through Mega Trends
- Criterion 3: Implementation Best Practices
- Criterion 4: Blue Ocean Strategy
- Criterion 5: Financial Performance

### **Customer Impact**

- Criterion 1: Price/Performance Value
- Criterion 2: Customer Purchase Experience
- Criterion 3: Customer Ownership Experience
- Criterion 4: Customer Service Experience
- Criterion 5: Brand Equity

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

Frost & Sullivan analysts 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 <b>Monitor, target, and screen</b>	Identify Award recipient candidates from around the globe	<ul style="list-style-type: none"> <li>• Conduct in-depth industry research</li> <li>• Identify emerging sectors</li> <li>• Scan multiple geographies</li> </ul>	Pipeline of candidates who potentially meet all best-practice criteria
2 <b>Perform 360-degree research</b>	Perform comprehensive, 360-degree research on all candidates in the pipeline	<ul style="list-style-type: none"> <li>• Interview thought leaders and industry practitioners</li> <li>• Assess candidates' fit with best-practice criteria</li> <li>• Rank all candidates</li> </ul>	Matrix positioning of all candidates' performance relative to one another
3 <b>Invite thought leadership in best practices</b>	Perform in-depth examination of all candidates	<ul style="list-style-type: none"> <li>• Confirm best-practice criteria</li> <li>• Examine eligibility of all candidates</li> <li>• Identify any information gaps</li> </ul>	Detailed profiles of all ranked candidates
4 <b>Initiate research director review</b>	Conduct an unbiased evaluation of all candidate profiles	<ul style="list-style-type: none"> <li>• Brainstorm ranking options</li> <li>• Invite multiple perspectives on candidates' performance</li> <li>• Update candidate profiles</li> </ul>	Final prioritization of all eligible candidates and companion best-practice positioning paper
5 <b>Assemble panel of industry experts</b>	Present findings to an expert panel of industry thought leaders	<ul style="list-style-type: none"> <li>• Share findings</li> <li>• Strengthen cases for candidate eligibility</li> <li>• Prioritize candidates</li> </ul>	Refined list of prioritized Award candidates
6 <b>Conduct global industry review</b>	Build consensus on Award candidates' eligibility	<ul style="list-style-type: none"> <li>• Hold global team meeting to review all candidates</li> <li>• Pressure-test fit with criteria</li> <li>• Confirm inclusion of all eligible candidates</li> </ul>	Final list of eligible Award candidates, representing success stories worldwide
7 <b>Perform quality check</b>	Develop official Award consideration materials	<ul style="list-style-type: none"> <li>• Perform final performance benchmarking activities</li> <li>• Write nominations</li> <li>• Perform quality review</li> </ul>	High-quality, accurate, and creative presentation of nominees' successes
8 <b>Reconnect with panel of industry experts</b>	Finalize the selection of the best-practice Award recipient	<ul style="list-style-type: none"> <li>• Review analysis with panel</li> <li>• Build consensus</li> <li>• Select winner</li> </ul>	Decision on which company performs best against all best-practice criteria
9 <b>Communicate recognition</b>	Inform Award recipient of Award recognition	<ul style="list-style-type: none"> <li>• Present Award to the CEO</li> <li>• Inspire the organization for continued success</li> <li>• Celebrate the recipient's performance</li> </ul>	Announcement of Award and plan for how recipient can use the Award to enhance the brand
10 <b>Take strategic action</b>	Upon licensing, company able to share Award news with stakeholders and customers	<ul style="list-style-type: none"> <li>• Coordinate media outreach</li> <li>• Design a marketing plan</li> <li>• Assess Award's role in future strategic planning</li> </ul>	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

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 7 of 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 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>.