

Price/Performance Value Leadership Award

Network Forensics Industry GLOBAL



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Background and Company Performance

Industry Challenges

The current trend for most service providers is network convergence. The growth of network infrastructure has flatlined, with many service providers focusing on reducing customer churn (rather than on increasing customer acquisition). Service providers, particularly in network operators' communities, have been forced over the years to operate on tighter margins, while expectations from their customers, in terms of service quality and end-user experience, have increased. Frost & Sullivan appreciates how this scenario has proved to be quite difficult for providers, especially when digital data flowing across the network has exponentially increased as well.

For enterprises, the performance of their applications is of the utmost importance, as any application downtime adversely impacts the quality of service provided to end users. Key reasons for the degradation of quality of service include the heterogeneous network over which the application is carried and the multi-component structure of enterprises' IT environments. These two factors compounded could substantially reduce the security of the network infrastructure further.

Monitoring the heterogeneous network infrastructure and the drive to provide differentiated services to customers can also be difficult for network operators, even for those that are well established in the industry. In addition, network operators should not overcharge their customers to avoid bad publicity or undercharge, which could impact their revenue performance and profitability. Moreover, network operators must periodically audit their infrastructure to ensure any issues are promptly rectified.

Therefore, Frost & Sullivan points out that enterprises and network operators require a lightweight, yet powerful network forensics solution that can conduct periodic audits of the network infrastructure and promptly rectify any faults, without affecting the throughput and latency of the network. Frost & Sullivan notes that such solutions need to analyze the network's key metrics and proactively identify any weak spots, thereby strengthening the security of the network infrastructure.

Price/Performance Attributes and Customer Impact

Functionality

New Jersey-based NIKSUN Inc. was founded in 1997 from a core of employees rooted in the Bell Labs system research disciplines. Since its inception, the company has engineered robust network forensic solutions that enhance network security and application performance from rich data gathered by passively monitoring data packets. Key products include NetDetector Suite, NetVCR Suite, Virtual and Cloud Solutions, NetOmni, NetTradeWatch, NetMobility, Puma, and PhoneSweep.

From the moment a connection is established between two end-use devices, a variety of protocols are used, including session interface protocol (SIP), real-time transfer protocol (RTP), and general packet radio services (GPRS) tunneling protocol (GTP). NIKSUN's solutions are engineered to comply with all protocols when end users set up their connections and handle throughputs now exceeding 200 gigabits per second (Gbps). This high throughput means that NIKSUN's rack solution is more compact than other competing solutions, which are about five times the size.

Frost & Sullivan recognizes how through this solution's innovative performance, customers require fewer units than with competing products, thus reducing the amount of energy consumed. In addition, while the company's products are designed for specific end-user applications, the underlying technology always remains the same. For example, if an end user procures NIKSUN's hardware for a specific application and then decides to add another functionality, only one license specific to that application is needed, as opposed to procuring yet another dedicated hardware device, expending also the effort to integrate multiple products into a single workflow. This service translates into reduced capital expenditures (CAPEX) and operating expenditures (OPEX) for end users.

The metadata collected by the NIKSUN solution is passively recorded and indexed in real time. Metadata computation, which is the full indexing of data in real time, empowers customers to understand historical trends, triangulate information on specific areas where an error is created, neutralize the cause, and then enhance the quality of service and experience on the end user's device. The solution's technical prowess comes from its enhanced scalability, which allows end users to add additional servers easily, without compromising any data collected by other recently added servers.

The ease with which NIKSUN's solutions can be added into infrastructures and the corresponding metadata analyzed in real time are made possible by the company's knowledge warehouse (NKW), which was engineered from the ground up for high performance, real-time analytics coupled with raw data storage as desired. This robust knowledge warehouse is equipped with enhanced in-memory capabilities that process individuals' critical information in one step, thereby uniquely enabling the solution to offer data forensics capabilities instantly.

Frost & Sullivan believes that the short window of time in which NIKSUN's solution can monitor, record, and then scrutinize the data collected for security is a key differentiator that sets the company apart from its competitors.

Prioritization of Features

Since its inception, NIKSUN's core mission statement has been geared towards the trend of network convergence.

By engineering a solution that can first capture all data packets and then add protocol analyzers, NIKSUN helps many high-profile commercial enterprises, governments, and

service providers, including the U.S. Department of Defense, address any key challenges they encounter when converging their networks. For example, NIKSUN's products allow end users to view all the information across different zones of the network and then analyze that information with protocol analyzers that are built on top of the solution.

This solution is quite useful when end users are capturing data across a heterogeneous network infrastructure and provides a variety of key performance indicators (KPI), including the number of connections established over a period of time and the error rate based on failing connections. The solution is then able to pinpoint the cause of the failure and the customers that can be affected by the failure. By integrating NIKSUN's solution before and after firewalls and routers, end users gain insights into repeated cyberattacks and can enhance the organization's cyber security defense more intelligently than before.

According to Frost & Sullivan, this unique prioritization of features helps NIKSUN reduce its product footprint significantly, thereby reducing end users' CAPEX. In addition, because NIKSUN's core solution remains the same, end users' OPEX is substantially reduced as well. The savings realized on CAPEX and OPEX are truly remarkable when comparing NIKSUN's solution with similar network monitoring and security products in the industry.

Perceived Value

NIKSUN's true value proposition lies in its ability to guaranteed losslessly analyze every packet, store it if desired, and generate metadata in real time, with a smaller hardware footprint and without encountering interoperability issues.

While many end users, which come from an eclectic range of industries, such as finance, security, and government, have tried to replicate NIKSUN's full data packet capture and indexing capabilities, the solution has been engineered from the ground up using proprietary hardware, thus making it difficult to recreate.

Moreover, NIKSUN's solution is so powerful that the U.S. Secret Service has been leveraging it extensively since 2005 to deter identity theft. For example, the solution allows the Secret Service to gather and analyze a significant amount of data on cyber-security attacks. NIKSUN's solution has proved to be a game changer for the Secret Service by helping it neutralize threats and ultimately save billions of dollars by reducing CAPEX and OPEX.

Furthermore, NIKSUN's network forensics solution has been so effective that it is increasingly the preferred solution adopted by branches of the U.S. Armed Forces.

Customer Ownership Experience

NIKSUN's product is often purchased entirely by its end users, including enterprises, government agencies, and service providers.

A key factor in measuring a solution's efficacy is ascertaining the time an end user takes to deploy the solution. NIKSUN's solution has an intuitive graphic user interface (GUI) and an exhaustive library of training modules; as such, end users can learn how to use the platform in a shorter period of time, depending on the level of technical expertise. In addition, end users have access to community forums, where they can interact with NIKSUN's experts or fellow users.

Although NIKSUN's product is generally sold as a complete standalone solution, the company can assist end users when required as well. For example, NIKSUN extended significant assistance to one of their service provider customers during the Super Bowl, which is an annual championship watched by over 100 million viewers in the United States. To ensure the live feed transmission continued uninterrupted, the network infrastructure was enhanced with several cell sites deployed around the arena. In addition, many over-the-top (OTT) service providers were leveraged to communicate updates on the game. To ensure the network infrastructure, along with many social media platforms, was up and running, organizers used NIKSUN's suite of solutions, in addition to trained engineers who were sent on-site to mitigate mishaps and neutralize threats as and when they surfaced.

Frost & Sullivan analysis reveals that a key reason why end users do not adopt a new solution is the amount of time it takes to implement the new network forensics solution, which often translates into substantial downtime and loss of revenue. By engaging its customers proactively through community forums and sending its engineers to each end user's location when required, NIKSUN offers its end users a customer ownership experience that is unparalleled in the industry.

Customer Service Experience

SupportNet is NIKSUN's online helpdesk tool. Along with responding to complaints, SupportNet offers customers many other value-add services, including regular software updates and information on new releases and data sheets. SupportNet and the NIKSUN community forum together serves as an invaluable feedback mechanism that is used to resolve any shortcomings in a solution and enrich it with enhanced functionalities through subsequent product updates.

NIKSUN's end-user community has a considerably high degree of heterogeneity inherent within it, both in terms of size and industrial background. To ensure that its end users' complaints are resolved quickly, NIKSUN offers help desk support predominantly through two tiers: standard support and platinum support.

The standard support is the most basic support tier. In this model, the support team is only available during business hours; therefore, this type of support is relevant for end users that operate in a slower-paced or small business environment.

The platinum support is a significant upgrade to the standard support. End users that subscribe to the platinum support receive round-the-clock access to NIKSUN's support

services as well as a faster response time of no more than 20 minutes, in most cases. Furthermore, on average, NIKSUN has consistently completed configuration changes in one hour and has updated its software code within two days.

Frost & Sullivan commends the versatility of NIKSUNs' customer service, its robust feedback mechanism, and average time it takes to resolve end-user complaints, all of which are clearly the best in the industry.

Conclusion

NIKSUN has engineered a solution that analyzes data streams, audits network performance, and strengthens network security. With its many form factors, NIKSUN's solution can conduct all three important use cases that form the core of its network forensics solution, while keeping end users' CAPEX and OPEX to a minimum. With its customizable customer service and robust feedback mechanism, the company addresses end-user feedback proactively and ensures that its products stay relevant with the latest trends in the industry.

With its strong overall performance, NIKSUN has earned the 2018 Frost & Sullivan Global Price/Performance Value Leadership Award.

Significance of Price/Performance Value Leadership

Ultimately, growth in any organization depends upon customers purchasing from a company, and then making the decision to return time and again. A key component of customer retention is the delivery of a high-quality product at a reasonable price. To achieve these dual goals (customer engagement and price/performance), an organization must strive to be best-in-class in three key areas: understanding demand, nurturing the brand, and differentiating from the competition.



Understanding Price/Performance Value Leadership

Best-in-class organizations are particularly successful in two critical areas: first, helping customers to appreciate and enjoy the product at every price point; and second, ensuring that customers perceive a demonstrable difference in performance features at every escalating price point. Ultimately, this balance allows companies to profitably deliver a variety of product options to customers, differentiate the product suite, and compete at every level of the market.

Key Benchmarking Criteria

For the Global Price/Performance Value Leadership Award, Frost & Sullivan analysts independently evaluated two key factors—Price/Performance Attributes and Customer Impact—according to the criteria identified below.

Price/Performance Attributes

- Criterion 1: Functionality
- Criterion 2: Ease of Use
- Criterion 3: Product/Service Quality
- Criterion 4: Performance Reliability
- Criterion 5: Prioritization of Features

Customer Impact

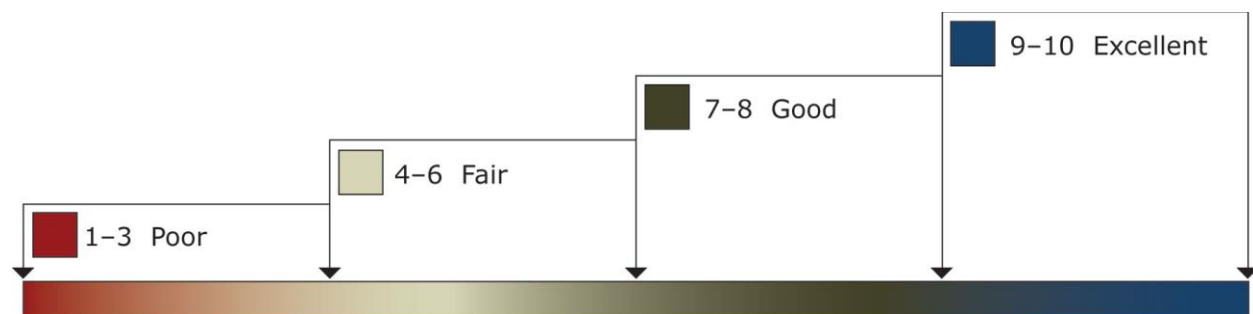
- Criterion 1: Perceived Value
- Criterion 2: Customer Purchase Experience
- Criterion 3: Customer Ownership Experience
- Criterion 4: Customer Service Experience
- Criterion 5: Brand Equity

Best Practices Award Analysis for NIKSUN

Decision Support Scorecard

To support its evaluation of best practices across multiple business performance categories, Frost & Sullivan employs a customized Decision Support Scorecard. This tool allows our research and consulting teams to objectively analyze performance, according to the key benchmarking criteria listed in the previous section, and to assign ratings on that basis. The tool follows a 10-point scale that allows for nuances in performance evaluation. Ratings guidelines are illustrated below.

RATINGS GUIDELINES



The Decision Support Scorecard is organized by Growth Performance and Customer Impact (i.e., These are the overarching categories for all 10 benchmarking criteria; the definitions for each criterion are provided beneath the scorecard). The research team confirms the veracity of this weighted scorecard through sensitivity analysis, which confirms 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.

The results of this analysis are shown below. To remain unbiased and to protect the interests of all organizations reviewed, we have chosen to refer to the other key participants as Competitor 2 and Competitor 3.

<i>Measurement of 1-10 (1 = poor; 10 = excellent)</i>			
Price/Performance Value Leadership	Price/Performance Attributes	Customer Impact	Average Rating
NIKSUN	9.0	9.1	9.1
Competitor2	7.7	7.7	7.7
Competitor3	7.2	7.4	7.3

Price/Performance Attributes

Criterion 1: Functionality

Requirement: The product offers enhanced functionality to serve the broadest range of applications

Criterion 2: Ease of Use

Requirement: Customers typically feel that the products are easy to use to generate optimal performance

Criterion 3: Product/Service Quality

Requirement: Products or services offer the best quality for the price, compared to similar offerings in the market

Criterion 4: Performance Reliability

Requirement: The product consistently meets or exceeds customer expectations for performance over its life cycle

Criterion 5: Prioritization of Features

Requirement: The features that customers most value and expect are most commonly available and most aggressively priced

Customer Impact

Criterion 1: Perceived Value

Requirement: Customers typically feel that they received more from the product or solution than they paid for it

Criterion 2: Customer Purchase Experience

Requirement: Customers feel like they are buying the most optimal solution that addresses both their unique needs and their unique constraints

Criterion 3: 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 4: Customer Service Experience

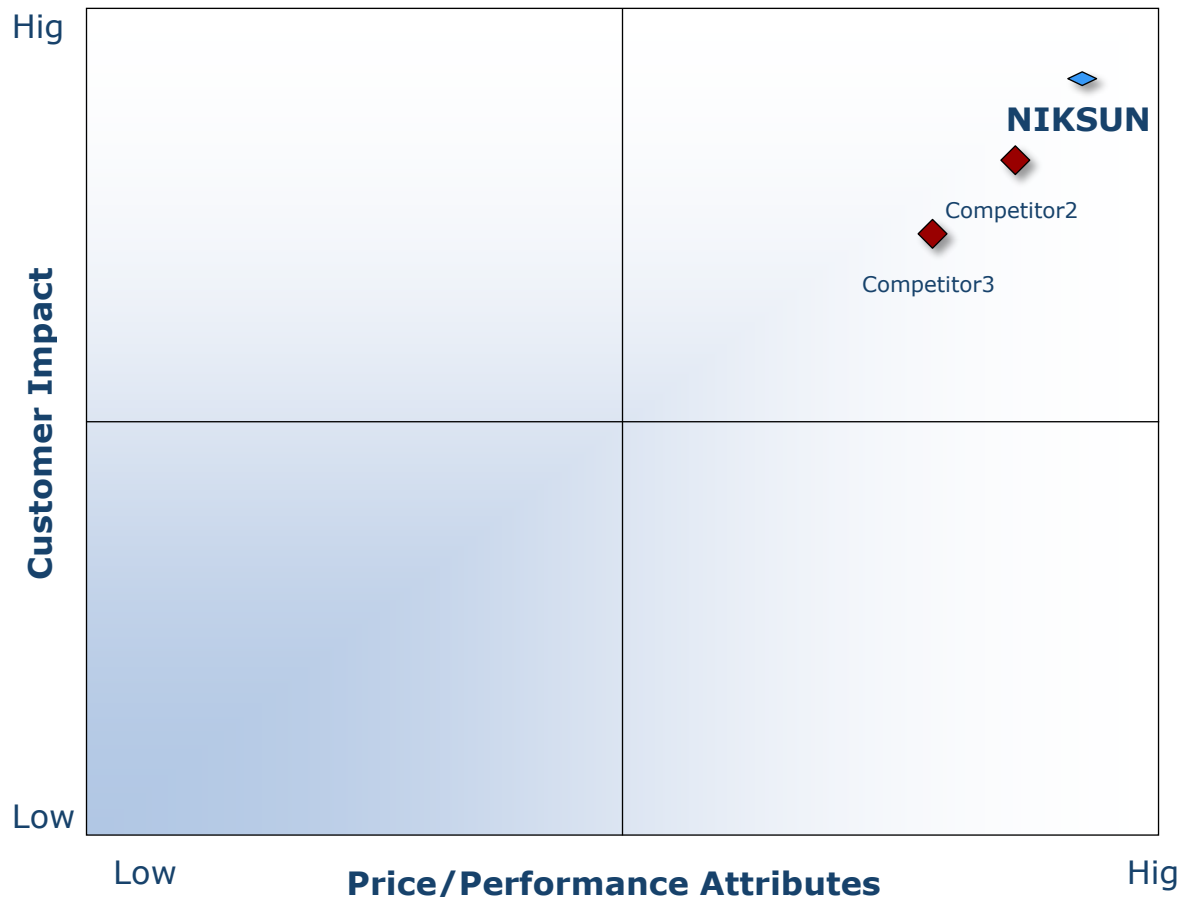
Requirement: Customer service is accessible, fast, stress-free, and of high quality

Criterion 5: Brand Equity

Requirement: Customers have a positive view of the brand and exhibit high brand loyalty

Decision Support Matrix

Once all companies have been evaluated according to the Decision Support Scorecard, analysts can then position the candidates on the matrix shown below, enabling them to visualize which companies are truly breakthrough and which ones are not yet operating at best-in-class levels.



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 practices criteria. The reputation and integrity of the Awards are based on close adherence to this process.

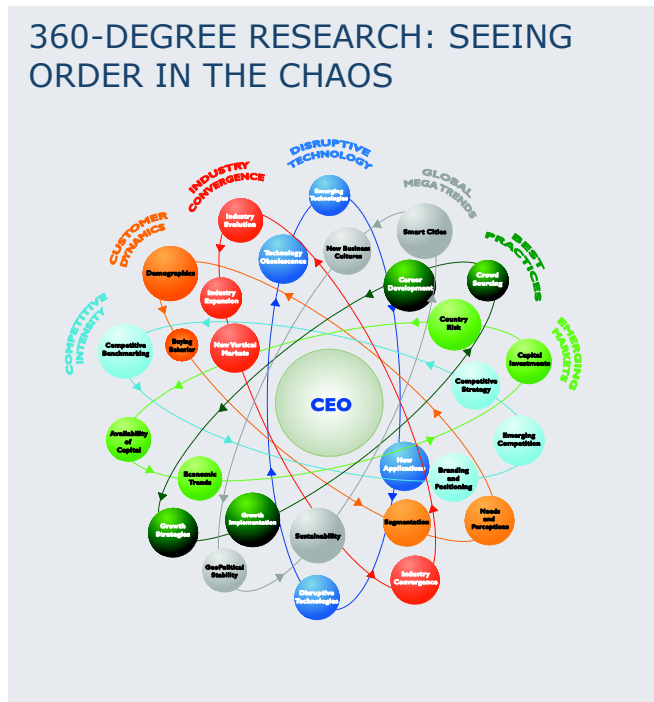
STEP	OBJECTIVE	KEY ACTIVITIES	OUTPUT
1 Monitor, target, and screen	Identify Award recipient candidates from around the globe	<ul style="list-style-type: none"> • Conduct in-depth industry research • Identify emerging sectors • Scan multiple geographies 	Pipeline of candidates who potentially meet all best-practices criteria
2 Perform 360-degree research	Perform comprehensive, 360-degree research on all candidates in the pipeline	<ul style="list-style-type: none"> • Interview thought leaders and industry practitioners • Assess candidates' fit with best-practices criteria • Rank all candidates 	Matrix positioning all candidates' performance relative to one another
3 Invite thought leadership in best practices	Perform in-depth examination of all candidates	<ul style="list-style-type: none"> • Confirm best-practices 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	<ul style="list-style-type: none"> • Brainstorm ranking options • Invite multiple perspectives on candidates' performance • Update candidate profiles 	Final prioritization of all eligible candidates and companion best-practices positioning paper
5 Assemble panel of industry experts	Present findings to an expert panel of industry thought leaders	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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-practices Award recipient	<ul style="list-style-type: none"> • Review analysis with panel • Build consensus • Select recipient 	Decision on which company performs best against all best-practices criteria
9 Communicate recognition	Inform Award recipient of Award recognition	<ul style="list-style-type: none"> • Present Award to the CEO • 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

STEP	OBJECTIVE	KEY ACTIVITIES	OUTPUT
10 Take strategic action	Upon licensing, company is able to share Award news with stakeholders and customers	<ul style="list-style-type: none"> 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

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.



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 practices 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>.