

F R O S T & S U L L I V A N

# Pivot 3

## 2017 North American Surveillance Storage Solutions Technology Leadership Award



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## Background and Company Performance

### *Industry Challenges*

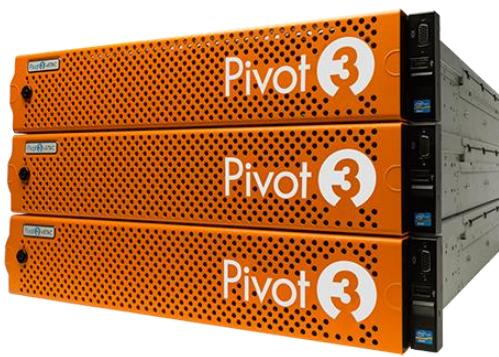
Enterprises across industry verticals need to store data digitally; however, the growth of the demand for video surveillance and the Internet of Things exponentially accelerates the sheer amount of data collected—e.g., video, audio, and real-time sensor information from myriad devices—and drastically increases the need for data storage capacity and availability. In many cases, organizations—e.g., law enforcement agencies, healthcare facilities, and government entities—cannot simply remove files to create space for new data due to regulations or industry compliance standards. Businesses find that expanding their data storage is an expensive and highly disruptive endeavor.

Stand-alone server hardware used in many packaged Network Video Recorder (NVR) appliances is insufficient to manage and protect this massive amount of new data. So organizations have turned to their IT departments for solutions. They often rely on traditional data center components such as server virtualization, shared storage arrays, and complex managed networks. However, IT technologies such as these were not designed to handle the unique characteristics of video surveillance and IoT applications—e.g., massive and highly variable data ingest rates and simple, non-disruptive scalability. Additionally, many conventional IT methods of protecting systems against downtime and data loss are prohibitively expensive, complex, or ineffective for storage-intensive applications like video surveillance. These challenges increase cost and reduce the effectiveness of organizations' critical security technologies, exposing them to elevated risk of loss, regulatory penalties, or operational interruptions.

Hyperconverged infrastructure (HCI) solutions significantly reduce cost and complexity of by using software-defined methods to eliminate expensive, proprietary hardware, and maximize infrastructure performance, resiliency, and scalability. Few HCI providers offer solutions that target video surveillance data storage, a relatively new, but highly opportunistic market segment for HCI solutions. Frost & Sullivan believes vendors that can overcome these challenges and capitalize on new market opportunities will achieve success in the industry.

## Technology Leverage and Business Impact

Founded in 2003, Austin-headquartered Pivot3 leverages its founders' expertise in creating the first generation of software-defined storage technologies to empower its clients with HCI solutions that provide superior capturing, storing, and managing capabilities for video surveillance data. The company's HCI solutions also serve other industry use-cases. Pivot3 supports 18,000 HCI deployments worldwide—over 2,000 customers in 54 countries—with strategically located offices to serve its clients better. Additionally, Pivot3 acquired NexGen Storage (NexGen) in 2016 to enhance its data storage offerings by empowering its clients with the first priority-aware and performance-focused HCI solution on the market.



### Innovative Technology Enhancements

Pivot3 initially optimized its HCI solution to specifically address the needs of video surveillance and IoT workloads. Pivot3's engineers were able to take advantage of advancements in CPU speed and power, virtualizing Video Management Software (VMS) application servers directly onto the software-defined storage appliances.

Pivot3 HCI was designed to deliver a scale-out storage system built for the performance and reliability needs of any video surveillance or streaming media workload. Pivot3 combines storage, compute, and networking into a simple, modular system, reducing the requirement to purchase, power, cool, and maintain separate, physical pieces of hardware.

Pivot3 HCI is engineered to be a massively parallel storage system that aggregates bandwidth across all storage network ports, storage controllers, and physical drives. Write transactions bypass the hypervisor to improve the efficiency of the data path, and negate some of the overhead associated with the hypervisor IO path. High throughput is achieved and sustained during periods of peak data traffic and degraded modes of operation, burstiness is therefore flattened out and frame lost due to controller overload is avoided.

Hardware failures are more common in write-intensive applications like video surveillance and IoT. Pivot3 eliminates system downtime and data loss that result from these hardware failures. Pivot3's HCI provides complete failover protection for virtual servers and storage, and patented erasure coding technology protects data against the simultaneous failure of up to five drives or an entire node plus two additional drives in the environment.

As cameras are added to a system over time, camera technology advances and environmental conditions change, storage and compute resources must scale respectively to handle the additional loads. Pivot3 surveillance solutions enable scaling both storage and compute capacity for the entire environment by simply adding a single node. Resources are automatically allocated to the infrastructure, traffic is automatically load-balanced, and all systems remain online during the entire process.

Pivot3 has removed the complexity from managing enterprise-class server and storage infrastructure. Management and maintenance tasks are automated, the entire environment will self-optimize and self-heal, and Pivot3 proactively monitors all system resources and alerts users of any impending problems. All servers and storage are managed through a single pane of glass with an intuitive GUI or through a plugin to an existing VMware vCenter environment.

Pivot3's surveillance solutions reduce the costs of acquisition and ongoing maintenance costs of an enterprise-class video infrastructure. Pivot3's patented erasure coding results in up to 94% usable storage efficiency, ensuring than an industry leading amount of raw storage is available for video data. Physical servers may be consolidated in a virtual environment without any performance impact, greatly reducing the total hardware requirements and the need for dedicated physical servers. All nodes are deployed on industry-standard x86 server hardware which eliminates the need for expensive proprietary SAN storage hardware.

### **Customer-centric Solutions and Service Driving Company Growth**

Pivot3 frequently reaches out to its customers and partners to ensure it provides the solutions that are most important—even creating solutions to solve partners' issues. The company has focus groups, user groups, and anytime customer service centers, and its product management team spends a lot of time with clients. Pivot3 offers different levels of support—direct lines to customer support personnel, hot phones, and a “phone home” capability that allows a client's system to run a self-check, and then report any problems. A unique feature of the self-check and “phone home” capabilities is that it empowers customers to avoid any downtime by detecting future issues, allowing Pivot3 to remedy the situation proactively. For example, if needed, the company will send a new device, free-of-charge to prevent loss of data and revenues. In addition to self-checks, Pivot3 conducts system checks with clients either remotely or on-site, and the executive team receives daily reports to ensure the company takes action on any critical customer issues. Also, clients have a direct line to a group of engineers who are specifically designated to support customers.

Customer service is an essential component of Pivot3's business model; therefore, it remains agile and responsive to customer and industry needs. The company retained many employees from its acquisition of NexGen, and it hires innovators and inventors to continue providing differentiated solutions that are ahead of the competitive curve.

As a testament to Pivot3's success, the company grew more than 250% in Q4 2016 over Q4 2015. Moreover, Pivot3's technology and reputation contribute to the company's growth—companies refer other businesses to Pivot3 for their data storage needs. Notably, one of the largest jails in North America spoke with one of Pivot3's customers and immediately wanted its HCI solution, stating "*We're already sold.*"

The company's clients consistently praise Pivot3's HCI solutions:

*"We wanted a security solution that specialized in video storage. Pivot3 HCI was easily the hands-down winner due its resilience and the ability to access video data from any device, at any time. We collaborated with our IT team during the selection process and in our opinion, Pivot3 delivered the best solution."* – Joseph Souza, Assistant Director of Security, University of Central Florida, US

*"We needed a solution that is highly resilient, but also easy to manage for non-technical users such as the security personnel who manage the cameras. Ease of management was one of the deciding factors in choosing Pivot3. One of the things that impressed us with Pivot3 is how easy it is to scale—all we need do is to purchase and install a new appliance."* – Lee Richmond, Manager of IT, Leicester City Football Club, UK

For potential clients unfamiliar with Pivot3, the company will conduct a "proof of concept" trial-period—resulting in an 85% customer win-rate. Additionally, the company receives a 98% rating for its customer service and overall client satisfaction.

Pivot3 is actively merging its surveillance and data center product lines to optimize its solutions and allow end users to run multiple workloads on one common infrastructure platform. For example, the company already reduced deployment time for FedEx, a major customer, by 98%—down to two hours total—to connect multiple systems—e.g., surveillance video, point-of-sale, pick and pack, and billing applications—into a single user interface. Pivot3 is the first and only HCI storage provider in the video surveillance market—as proof of its success, in 2016 the company grew 84% in bookings, and grew 70% the previous year. Frost & Sullivan believes Pivot3 is a leader in the surveillance storage solutions industry and positions itself to remain in a league of its own.

## *Conclusion*

Many storage solutions provide clients with second-rate technologies that slow processing speeds and increase the risk of critical downtime and data loss, causing risk exposure and disruptions in data quality. Pivot3 leverages its software-defined storage expertise, customer feedback, partnerships, and innovative employees to maintain its position as a leader in the surveillance data storage industry through solutions that empower organizations to optimize server and storage performance while minimizing downtime, data loss and cost.

With its future-facing innovations, customer-centric solutions, and strong overall performance, Pivot3 earns Frost & Sullivan's 2017 North America Technology Leadership Award for its surveillance storage solutions.

## Significance of Technology Leadership

Technology-rich companies with strong commercialization strategies benefit from the increased demand for high-quality, technologically-innovative products. Those products help shape the brand, leading to a strong, differentiated market position.



## Understanding Technology Leadership

Technology Leadership recognizes companies that lead the development and successful introduction of high-tech solutions to customers' most pressing needs, altering the industry or business landscape in the process. These companies shape the future of technology and its uses. Ultimately, success is measured by the degree to which a technology is leveraged and the impact that technology has on growing the business.

## *Key Benchmarking Criteria*

For the Technology Leadership Award, Frost & Sullivan analysts independently evaluated two key factors—Technology Leverage and Business Impact—according to the criteria identified below.

### **Technology Leverage**

- Criterion 1: Commitment to Innovation
- Criterion 2: Commitment to Creativity
- Criterion 3: Technology Incubation
- Criterion 4: Commercialization Success
- Criterion 5: Application Diversity

### **Business Impact**

- Criterion 1: Financial Performance
- Criterion 2: Customer Acquisition
- Criterion 3: Operational Efficiency
- Criterion 4: Growth Potential
- Criterion 5: Human Capital

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

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 <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 recipient</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 is 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 players 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>.