

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

NETAPP

2022 ENABLING TECHNOLOGY LEADER

*NORTH AMERICAN ARTIFICIAL
INTELLIGENCE HEALTHCARE
SOLUTIONS INDUSTRY*

Best Practices Criteria for World-Class Performance

Frost & Sullivan applies a rigorous analytical process to evaluate multiple nominees for each award category before determining the final award recipient. The process involves a detailed evaluation of best practices criteria across two dimensions for each nominated company. NetApp excels in many of the criteria in the AI healthcare solutions space.

AWARD CRITERIA	
<i>Technology Leverage</i>	<i>Customer Impact</i>
Commitment to Innovation	Price/Performance Value
Commitment to Creativity	Customer Purchase Experience
Stage Gate Efficiency	Customer Ownership Experience
Commercialization Success	Customer Service Experience
Application Diversity	Brand Equity

A Market Snapshot

The COVID-19 pandemic accelerated cloud and digital transformation in every industry. Specifically, artificial intelligence (AI) has grown into a mission-critical asset in the healthcare industry, improving the patient experience and reducing costs while also providing a competitive advantage for medical units and facilities. Over the last two to three years, AI has grown into an integral part of all healthcare systems; it is also more accessible and affordable for patients, providers, and payers. Moreover, the introduction of AI-driven platforms and technology stands to reshape the healthcare industry with novel, smart approaches to help clinicians and administrators, and, most importantly, improve patient care. However, existing challenges like implementation and management costs, perceived complexity, business case justification, and compliance and security issues continue to prevail. Frost & Sullivan estimates the global AI for healthcare IT will reach \$34.83 billion by 2025 as the technology continues to drive digital transformation in this industry.¹

¹ Frost Radar™: Artificial Intelligence for Healthcare IT, Global, 2020 (Frost & Sullivan June 2020)

“NetApp’s innovative product portfolio enables the company to remove siloed processes and evolve them with real-time, advanced analytics, and AI solutions. ONTAP, NetApp’s flagship software streamlines data management and protection on-premise, at the edge, or in the cloud. This one-stop-shop solution delivers unmitigated value via key features, such as protocol support (Network Attached Storage, Storage Area Network), data protection, efficient storage, and security features.”

**- Samantha Fisher,
Best Practices Research Analyst**

Commitment to Innovation Accelerating NetApp’s Time-to-market

Founded in 1992 and headquartered in San Jose, California, NetApp is a hybrid cloud data services and management provider. The company first went to market during the dial-up era, which means it has adapted to and endured various technological evolutions, integrating existing and emerging technologies to ensure ongoing product excellence. NetApp’s agility enabled its first-mover positioning in hybrid cloud as it was the first established storage provider to identify and pursue this critical technology.

Backed by world-class subject matter experts, NetApp developed its Cloud technology and strategy over the last several years. The company refined its holistic approach to cloud computing and AI for various

industries, including the highly-regulated healthcare sector. According to NetApp, diagnostic solutions at the edge, clinical applications, and cloud environments must move data securely and fluidly for AI to run optimally.² NetApp’s innovative product portfolio enables the company to remove siloed processes and evolve them with real-time, advanced analytics, and AI solutions. ONTAP, NetApp’s flagship software, streamlines data management and protection on-premises, at the edge, or in the cloud. This one-stop-shop solution delivers unmitigated value via key features, such as protocol support (NAS, SAN, and S3), data protection, efficient storage, and security features.³ NetApp delivers a solution that enables customers to solve performance and security challenges to improve patient care. More importantly, the company empowers customers to remove data silos to allow the real-time analysis of large datasets for improved diagnoses, reduced administrative burden on clinicians, rapid drug development, and streamlined administration activities to name but a few use cases.

With its foundational ONTAP platform in place, NetApp assembled a comprehensive solutions portfolio purpose-built to bridge industry gaps. The company’s portfolio includes items like Reference Architectures (validated and documented solutions for AI) and Integrated Solutions (pre-sized, pre-configured). More importantly, the company’s best-in-class Data Fabric (i.e., a software-defined data management) strengthens end-to-end performance, improves costs, and streamlines infrastructure configuration and management. Thus, NetApp helps its clients realize the untapped potential of AI as a diagnostic aid in the healthcare field.

Use Case: Chest Imaging for Advanced COVID-19 Patients

² NetApp. “Artificial Intelligence in Medicine.” Web page. Accessed 13 May 2022. <https://www.netapp.com/artificial-intelligence/ai-in-medicine/>

³ NetApp. *NetApp ONTAP 9.8 Feature Overview*. 3 May 2022. Accessed 13 May 2022. https://docs.netapp.com/us-en/ontap-whatsnew/pdfs/sidebar/NetApp_ONTAP_9_8_Feature_Overview.pdf

At the start of the pandemic, healthcare facilities identified chest imaging as a critical need for patients with advanced COVID-19; however, traditional practices require radiology staff to analyze and compare x-ray and computed tomography (CT) images with a patient's earlier scans. A busy facility performs many lung CTs per day, which means medical teams saw a significant decline in service levels beginning in 2020. To address this growing need, NetApp partnered with SFL Scientific, a data science consulting firm, to develop a high-performance COVID-19 lung segmentation technology that leverages state-of-the-art AI model and transfer learning. The result is a rapidly-available, accurate, optimized, and continuously improving AI model that offers complete traceability. The collaboration saw the AI model built on NetApp's storage infrastructure enable a six-second COVID-19 lesion diagnosis, which outpaces many advanced solutions and traditional human analysis. As the world recovers from COVID-19, NetApp has identified additional clinical application areas for this technology, including automatic CT scan monitoring, clinical study treatment monitoring, and outcome prediction.

Frost & Sullivan's research identifies NetApp as a AI vendor, leveraging cutting-edge methodologies to advance the AI and cloud healthcare solutions market.

A Customer-centric Approach Driving Unmatched Client Experience

With its customer-centric corporate philosophy, NetApp operates on the central tenet that its success depends on customer satisfaction. This philosophy permeates the company's daily practices. NetApp focuses on the entire AI lifecycle experience, from initial short-list creation, data acquisition, data pipeline and data lake management, AI ML/DL training, model deployment, and AI inference. Understanding that the customer experience (CX) can make or break a vendor, the company created a group in 2018 to understand, define, and coordinate its CX approach. Since its inception, the group has identified and

"NetApp's technology delivers best-in-class visibility across the entire value chain. With application areas in radiology, drug development, and patient care, the company enables medical teams to digitally transform their processes, resulting in improved patient outcomes. The company pairs its technology focus with customer-centric values, thus earning a solid reputation in AI for the healthcare industry market."

***- Hemangi Patel,
Industry Analyst***

established baseline CX metrics, which feed into its product, service, and workflow evolutions and improve metrics over time.

NetApp continues to engage in extensive CX-focused research to identify other areas of improvement for the company, resulting in crucial changes in its internal and external business processes. The company rounds out this approach with Keystone, a program that simplifies and streamlines CX for information technology (IT) infrastructure purchases and operations. The subscription-based model eliminates the deployment complexity by asking customers three simple questions: where (cloud or on-premise), what (block, file, or object data services), and who (party responsible for

management, NetApp or customer). Keystone also allows rapid IT provisioning, reducing storage management costs and increasing IT stability and predictability. Lastly, the company offers Cloud Customer Advisory Board that focuses on understanding customer preferences regarding cloud-based services. Launched in 2019, the group enables the company to innovate and maintain its hybrid multi-cloud market position.

Use Case: AstraZeneca⁴

To digitally transform its processes, pharmaceutical leader AstraZeneca focused on integrating hybrid cloud and data-enabling technologies for research improvements in areas such as oncology. The firm leveraged ONTAP AI on-prem combined with AFF A800 and DGX A100 for shared use across teams in R&D and commercial. The new platform uses AI to enable rapid, accurate image analysis for some of AstraZeneca's Early Science teams. The enterprise witnessed optimized data utilization, faster molecule discovery, and significant increases in patient treatment development.

NetApp meets with clients to assess their specific needs and develop tailored solutions with roadmaps for seamless execution. This foundational approach establishes ongoing trust with customers for long-lasting relationships extending throughout the product lifecycle.

Positioned for Growth

Since its inception, NetApp's sterling reputation and customer-centric framework led to its coveted preferred partner status. Over the years, it added new customers to its established base. NetApp has built a global brand by serving customers across different industry verticals, such as healthcare, retail, and manufacturing. The company supports businesses of varying sizes, from large enterprises to agile startups. The company continues to see its efforts come to fruition as it reported significant growth this year, with net revenue growth year-over-year to \$6.32 billion, compared to \$5.74 billion in fiscal year 2021.⁵ The company expects this metric to grow by 6% to 8%.⁶

On the technology front, NetApp continues to fortify its position in the market through collaborations and partnerships. For example, NetApp has a strong and growing alliance with NVIDIA that fuels much of its innovation excellence. The combination of NVIDIA DGX SuperPOD, ONTAP AI platform, and NVIDIA DGX Foundry AI service delivers a best-of-breed model training infrastructure. In May 2022, NetApp announced its EF600 all-flash NVMe storage combined with BeeGFS parallel file system achieved certification for NVIDIA DGX SuperPOD, which simplifies AI and high-performance computing infrastructure, paving the way for rapid implementation. March 2022 also delivered keen innovation as NetApp collaborated with Cisco to deliver FlexPod XCS, resulting in a scalable, flexible, and accessible platform. Its focused execution and effective management throughout the supply chain headwinds enable the company to capture opportunities while investing for continued growth and delivering operating leverage.

Frost & Sullivan believes the company is well-positioned to drive the AI and cloud-computing for healthcare space into its next growth phase, capturing market share and sustaining its position in the coming years.

⁴ NetApp. "Customer Stories: AstraZeneca." Web page. Accessed 15 May 2022. <https://www.netapp.com/customers/astrazeneca-data-fabric-case-study/>

⁵ NetApp. "NetApp reports fourth quarter and fiscal year 2022 results." 1 June 2022. Accessed 14 June 2022. <https://www.netapp.com/newsroom/press-releases/news-rel-20220601-results-493279/>

⁶ Ibid

Conclusion

Technology integration is a critical success factor for the healthcare industry. Yet, with many options available, market stakeholders need to leverage the most appropriate and best technology-based solutions to optimize their market impact. With its artificial intelligence (AI) and cloud computing-backed technology, NetApp delivers highly reliable and secure solutions to its customers. The company stands out from competitors based on its commitment to innovation, creativity, and ability to launch new solutions with far-reaching impact and application. NetApp's technology delivers best-in-class visibility across the entire value chain. With application areas in radiology, drug development, and patient care, the company enables medical teams to digitally transform their processes, resulting in improved patient outcomes. The company pairs its technology focus with customer-centric values, thus earning a solid reputation in the AI healthcare solutions industry.

For its strong overall performance, NetApp is recognized with Frost & Sullivan's 2022 North American Enabling Technology Leadership Award in the AI healthcare solutions market.

What You Need to Know about the Enabling Technology Leadership Recognition

Frost & Sullivan's Enabling Technology Leadership Award recognizes the company that applies its technology in new ways to improve existing products and services and elevate the customer experience.

Best Practices Award Analysis

For the Enabling Technology Leadership Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

Technology Leverage

Commitment to Innovation: Continuous emerging technology adoption and creation enables new product development and enhances product performance

Commitment to Creativity: Company leverages technology advancements to push the limits of form and function in the pursuit of white space innovation

Stage Gate Efficiency: Technology adoption enhances the stage gate process for launching new products and solutions

Commercialization Success: Company displays a proven track record of taking new technologies to market with a high success rate

Application Diversity: Company develops and/or integrates technology that serves multiple applications and multiple environments

Customer Impact

Price/Performance Value: Products or services provide the best value for the price compared to similar market offerings

Customer Purchase Experience: Quality of the purchase experience assures customers that they are buying the optimal solution for addressing their unique needs and constraints

Customer Ownership Experience: Customers proudly own the company's product or service and have a positive experience throughout the life of the product or service

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

Brand Equity: Customers perceive the brand positively and exhibit high brand loyalty

About Frost & Sullivan

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Frost & Sullivan's proprietary model to systematically create ongoing growth opportunities and strategies for our clients is fuelled by the Innovation Generator™.

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Key Impacts:

- **Growth Pipeline:** Continuous Flow of Growth Opportunities
- **Growth Strategies:** Proven Best Practices
- **Innovation Culture:** Optimized Customer Experience
- **ROI & Margin:** Implementation Excellence
- **Transformational Growth:** Industry Leadership



The Innovation Generator™

Our 6 analytical perspectives are crucial in capturing the broadest range of innovative growth opportunities, most of which occur at the points of these perspectives.

Analytical Perspectives:

- **Mega Trend (MT)**
- **Business Model (BM)**
- **Technology (TE)**
- **Industries (IN)**
- **Customer (CU)**
- **Geographies (GE)**

