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Frost Radar™: Hybrid Cloud Storage, 2025

A Benchmarking System to Spark Companies to Action - Innovation That Fuels New Deal Flow and Growth Pipelines

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April 2025

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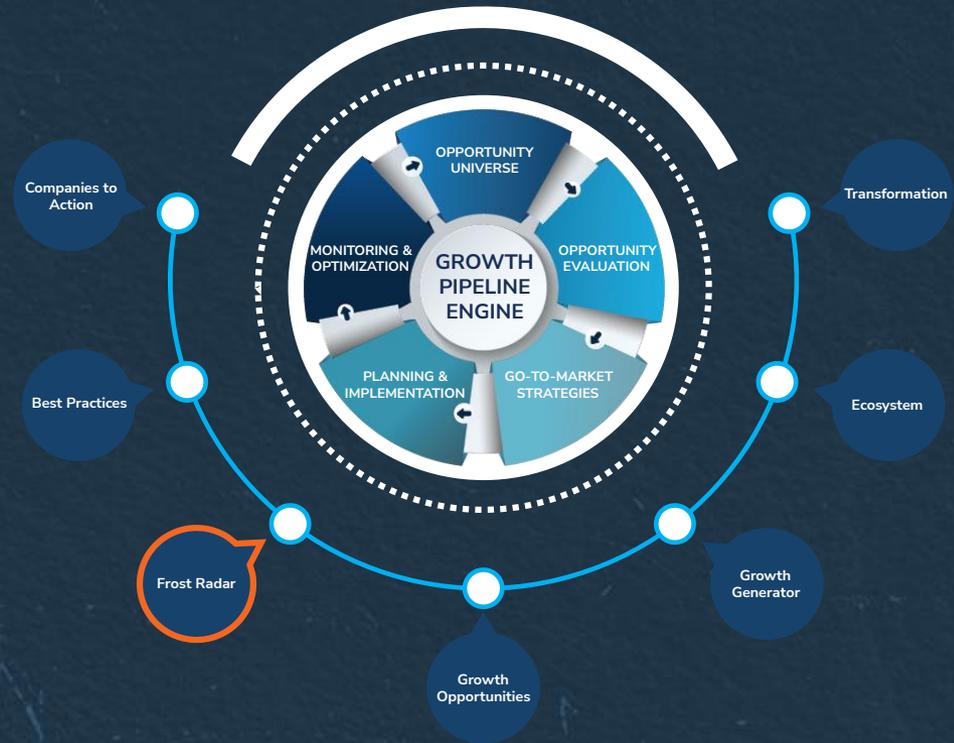
Strategic Imperative and Growth Environment
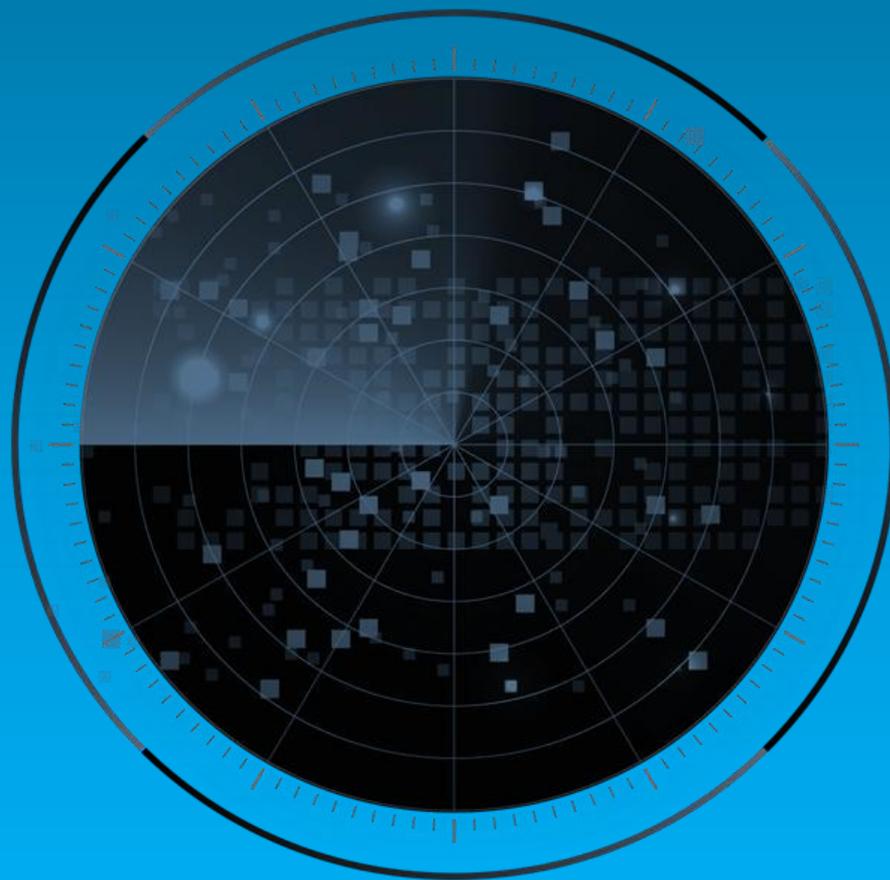
Strategic Imperative

- Businesses are collecting, managing, securing, and analyzing more data than ever before because of the rise of AI and other data-intensive apps. In a 2024 Frost & Sullivan global survey of IT decision-makers, 85% said becoming more data centric and AI-enabled was an important business goal, and more than half stated that AI is the technology that they will invest the most in over the next 12 months. However, most businesses struggle to derive the value they need from their data.

- Traditionally, data has been associated with specific workloads or applications. Siloed data and associated apps may be stored in a variety of locations and infrastructures, and valuable data and content may appear in many formats—structured and unstructured. This makes it difficult to unify disparate data in a way that AI applications can analyze and learn from it.

- Security and compliance are paramount. Corporate data must be protected from loss and breach, while remaining compliant with evolving regulations:

  - The average organization experiences 26 successful cyberattacks in a 12-month period, making new ways to effectively manage and protect data imperative.

  - Data handling and privacy regulations are increasing. The European Union in 2024 enacted the European Data Act, which sets new rules around personal data access and usage; the United States in the same year adopted the Protecting Americans' Data from Foreign Adversaries Act; and several US states have enacted legislation regarding individual data privacy rights and business data collection and usage.

- To deal with increasing data volumes, businesses need solutions that manage costs, ensure consistent performance, and support corporate sustainability goals. They seek a new type of storage that can disaggregate data from workloads, unify disparate datasets, operate across legacy and cloud environments, and provide high performance, strong security, and cost-effectiveness.

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Strategic Imperative (continued)

- To unify, manage, and secure voluminous enterprise data for use in data-heavy applications, such as AI, savvy businesses are turning to hybrid cloud storage solutions.

- A hybrid cloud storage environment is some combination of on-premises or hosted, private, or edge-based data stores with cloud-based storage infrastructures. Hybrid cloud storage enables:

  o Storage location choice based on performance, security and compliance, or cost

  o Unified data across different infrastructures and environments

  o Scalability based on usage of either a common control plane or a single, global namespace that enables data to be pooled and allocated across any storage infrastructure in the environment as usage needs dictate

  o Increased security, with many solutions offering solution-native data replication and near-real-time recovery

  o Improved processing and app performance, especially at the edge, with data placed in proximity to the applications or users that require it.

- Hybrid cloud storage disaggregates data from specific workloads and allows users to access and manipulate data using traditional file-based protocols (e.g., server message block [SMB] or network file service [NFS]) and object-based protocols (e.g., Amazon S3 [simple storage service] or OpenStack Swift) simultaneously.

- Most hybrid cloud storage solutions offer integrated data services, such as security capabilities and disaster recovery. Many also maintain industry- or region-specific certifications, such as GDPR, ISO/IEC 27001, HIPAA, SOC 2, or PCI DSS.

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Growth Environment

- The hybrid cloud storage market is in the emerging stages, with few vendors providing a complete solution that supports unified data and multiple storage formats (file and object) and data types (structured and unstructured).

- Frost & Sullivan believes that a full solution is necessary to support multimodal AI solutions, which draw from a combination of public and private datasets of a variety of formats and types. Ideally, a service offering a global namespace to unify data offers the best performance and scalability for workloads requiring large-scale datasets.

- Despite being nascent, the market opportunity is immense. Frost & Sullivan estimates that the market generated about $100 billion in 2024, with a projected compound annual growth rate of about 16% over the next 6 years. Some providers noted that these estimates could increase more rapidly if business adoption of AI and creation of large language models (LLMs) accelerate.

- Data immutability is one way to prevent ransomware—one of the fastest-growing cybercrimes impacting businesses today. Immutability leverages write once, read many (WORM) technology. When data is written to a storage system using WORM, it cannot be altered or deleted. This means that even if ransomware infiltrates the system, it cannot encrypt, modify, or delete the data. The data remains in its original state, ensuring integrity and availability. Choosing a WORM-enabled hybrid cloud storage service is a solid tactic for preventing ransomware attacks.

- Disaster recovery is becoming an IT requirement, ensuring quick recovery of data in the event of an outage. Many file service storage providers offer integrated disaster recovery at a lower cost than engaging a separate provider for those services.

- Considering the volume of data collection and usage required for AI, businesses concerned about the environmental impact of their IT footprint are looking for more sustainable ways to scale data storage.

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Source: Frost & Sullivan

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Frost Radar™: Hybrid Cloud Storage
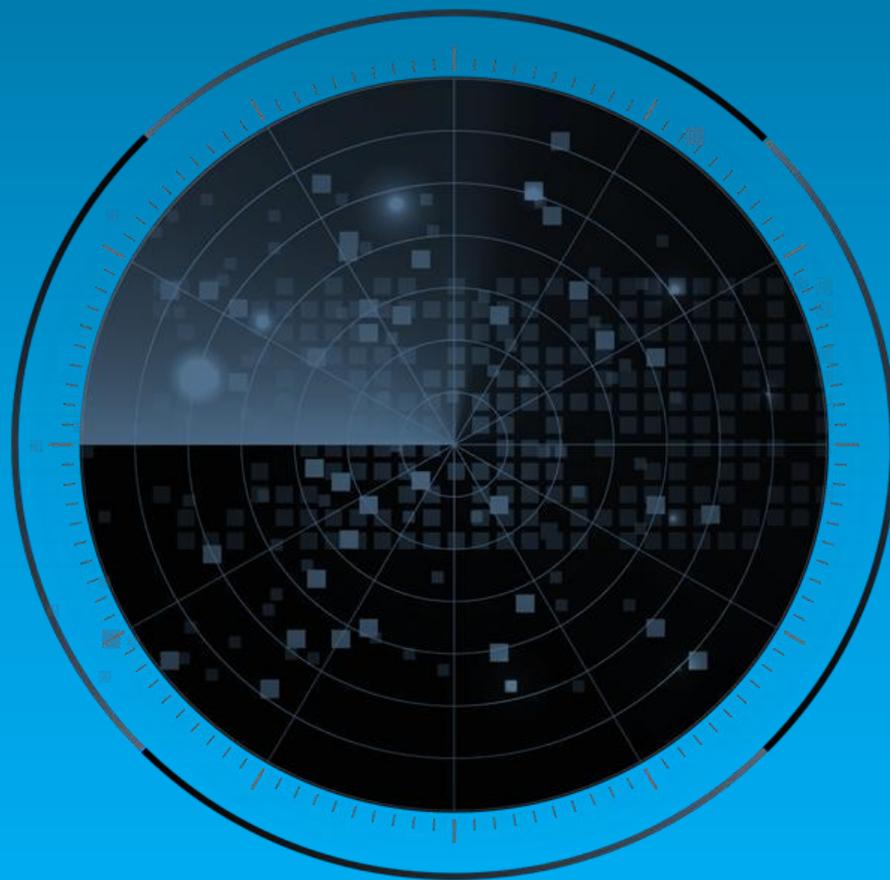
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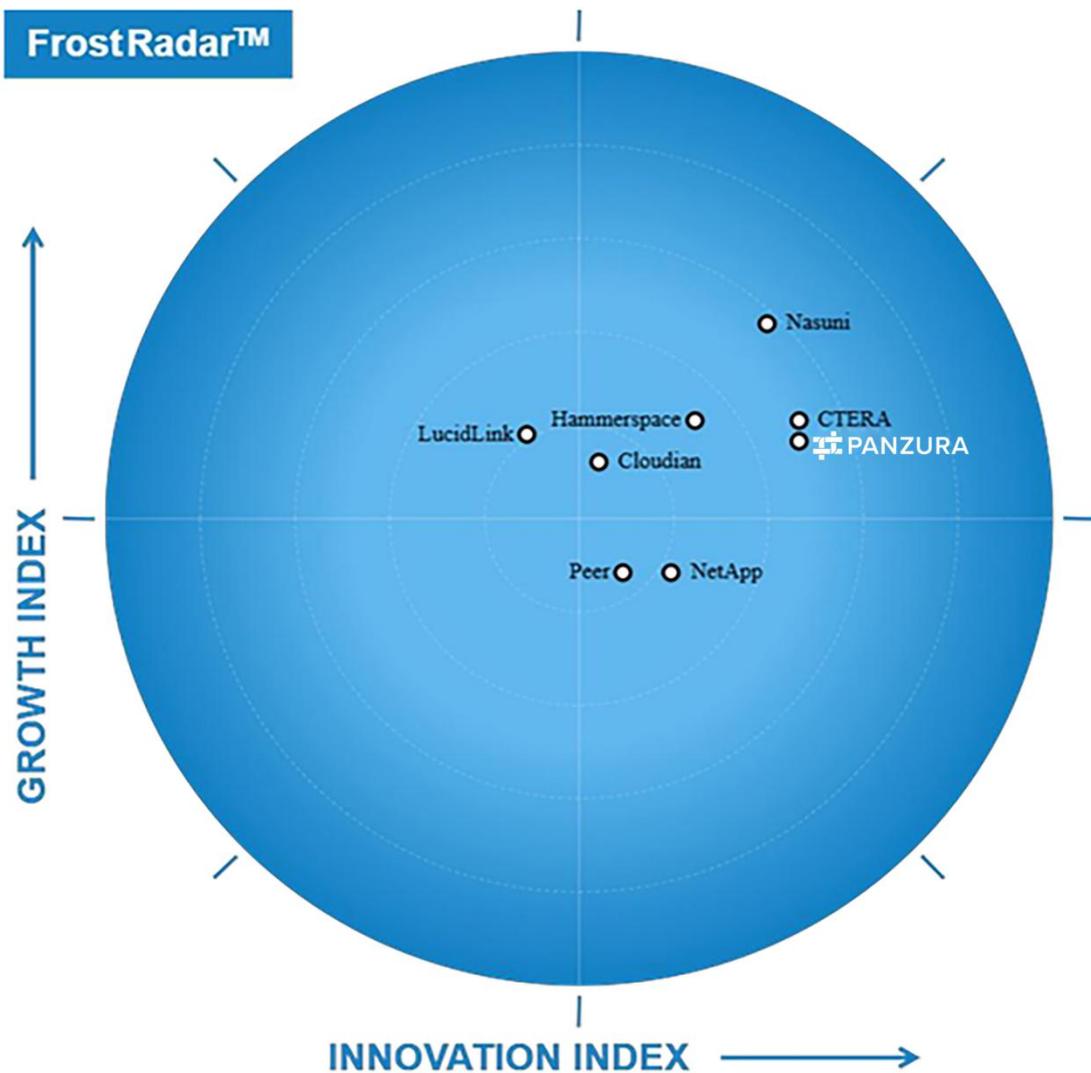
Frost Radar™ Competitive Environment

- The hybrid cloud storage market is converging with the file service market, which also unifies data and provides the ability to store or access data from both cloud-based and on-premises file stores.

- Two popular models exist to bring data from diverse sources into a cohesive data lake that can be used for analytics and AI. Platforms that use a global namespace and distributed nodes are increasingly common, though some providers are using APIs, hardware integrations, and common control planes to integrate data across disparate sources.

- Nasuni is the clear Growth Index leader on the Frost Radar™, with the company documenting robust revenue growth and a 42% increase in its customer base from 2023 to 2024. A large private equity investment in 2024 positioned Nasuni well for more research and development and the service enhancements that will result. The company's innovation is already strong, and it provides a robust solution to unify global data, make it accessible anywhere in the network, and improve business data resiliency without a separate product or service.

- Equally strong on the Frost Radar™ Innovation Index are CTERA and Panzura.

- Much of CTERA's innovations over the past year have been focused on enhancing data resiliency and cybersecurity while maintaining high throughput operations for excellent processing speed and efficiency. In addition to announcing more platform innovations than competitors in 2024, CTERA holds the most security certifications of the providers in this Frost Radar™ analysis. This makes CTERA a strong choice for businesses in highly regulated industries as well as government and military entities. The company recently launched its Data Intelligence tool, which offers customers a private, semantic RAG engine that uses live updates to keep AI workloads current with the latest corporate data, ensuring the best possible AI-generated insights.

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Frost Radar™ Competitive Environment (continued)

- Panzura's numerous platform enhancements are equally balanced between data security and resilience functionality and data intelligence capabilities. The company offers one of the fastest recovery point objectives (RPOs) of the vendors featured in this Frost Radar™ analysis with sub-60-second RPOs. It is also facilitating deeper data insights—particularly regarding security incidents and alerts—through LLM and AI assistant integration into the platform.

- Cloudian's inorganic growth through technology and reseller partnerships expanded the company's reach in recent years.

- Hammerspace launched fewer innovations in 2024, but it did bring to market a new Tier 0 storage that transforms local, non-volatile memory (NVM) express storage on GPU servers into ultrafast, persistent, shared storage, which was not possible with previous technology. This innovation enhances performance and data orchestration capabilities.

- LucidLink offers a niche service primarily targeting media and arts businesses. Its robust collaboration services are among the best on the market, making file collaboration easy despite collaborators' differing network connections or speeds.

- NetApp's BlueXP has earned its reputation for strong AI-based operations, with few providers offering the level of AI integration into their platforms that NetApp does. It is also one of few offering sustainability insights so that customers can proactively manage storage to be better stewards of the environment.

- Peer Software is a 30-year veteran in the software and storage markets. The company made notable enhancements to its data intelligence and resiliency capabilities in 2024, particularly with the launch of its PeerIQ service that enables companies to better plan their storage needs based on capacity and usage patterns.

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Frost Radar™:
Companies to Action
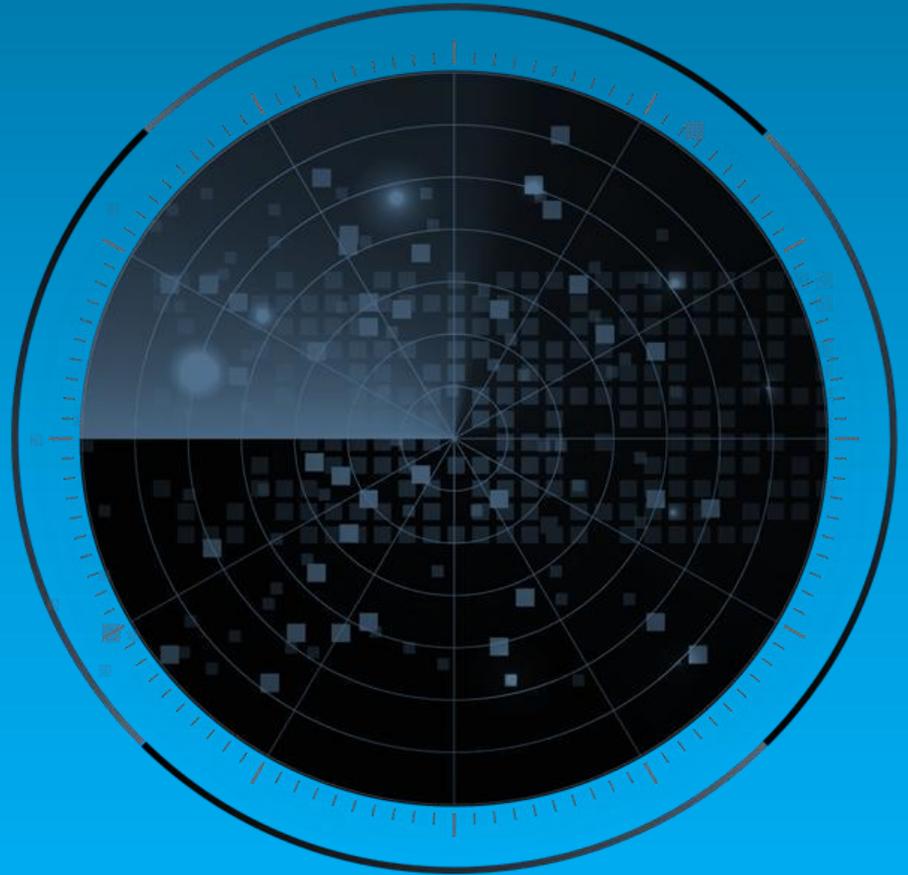
Panzura

INNOVATION

- CloudFS, the Panzura hybrid cloud file platform that is underpinned by a global cloud file system, enables data storage and access from a wide variety of infrastructures across the public and private cloud and on-premises infrastructure.

- The platform supports object stores from AWS, Backblaze, Cloudian, DellEMC, Google Cloud, IBM, Microsoft Azure, Minio, Oracle Cloud Infrastructure, and Wasabi. The platform is engineered for high availability and includes network acceleration that accommodates high-latency, remote object stores. The platform offers customers a sub-1-minute RPOs regardless of data location.

- Panzura has made a substantial investment in its new innovation center in Pune, India, which is yielding new products and solutions as well as product enhancements in the hybrid cloud file solution space.

- To facilitate enhanced security, Panzura launched several platform enhancements and value-added services over the last 12 months, including Panzura Detect and Rescue, which handles real-time detection and alerting of ransomware as well as automated interdiction; enhanced granular role-based access control; data services that provide audit policies and security information and event management integration; and audit alerts that inform storage administrators of any potential unauthorized data transfer out of a secured environment.

Panzura (continued)

INNOVATION

- To enhance performance for massive file and folder operations that support analytics and AI services, Panzura added platform support for Linux KVM on its virtual nodes; launched CloudFS Instant Nodes for high availability without the need for dedicated equipment; and added CloudFS Regional Stores that provide multibucket support with global data consistency as well as Azure storage-class configuration.

- The platform also enables data for AI by positioning CloudFS nodes in cloud regions closest to the LLM that the customer is using. With each node having metadata of a customer's entire file system, data is available without moving it from its stored location.

- Panzura is integrating AI assistants into the platform to provide deeper data insights to customers. This functionality will be available by the end of 2025.

Source: Frost & Sullivan

Panzura (continued)

GROWTH

- Panzura has enjoyed strong growth over the past four years with an estimated CAGR of about 21%.

- To increase growth, Panzura implemented a new go-to-market motion in 2024 that entailed increased outreach to enterprise customers and industry influencers, as well as refinement of target customer profiles, deployment of new marketing programs, and new focus on content tailored to enterprise needs.

- The new go-to-market motion included:

  o Refinement of the target customer profile

  o Implementation of new marketing programs

  o Renewed focus on enterprise-focused content marketing

- While most of the company's partnerships in 2024 and early 2025 were related to adjacent products—most notably its Symphony data intelligence platform—the company did announce numerous awards for the Cloud FS solution, which will drive customers to their service. They included:

  o The Cloud Awards 2024–2025 for the Best Cloud Data Management Solution

  o The CRN Cloud 100 "20 Coolest Cloud Storage Companies"

  o The Intellyx Digital Innovator award

Source: Frost & Sullivan

Panzura (continued)

FROST PERSPECTIVE

- Panzura has been a provider in the cloud storage space since 2008, but until recently, its low profile has somewhat hindered growth. Its enhanced growth strategy will continue to elevate the company's brand and profile in the market, resulting in growing customer adoption and revenue growth.

- The company has a solid service suite in the cloud storage space, and its CloudFS hybrid cloud storage and global file system offers customers a highly available and fault-resistant storage option. The immutability engineered into the platform makes it inherently secure and quickly recoverable with sub-minute RPOs should the need arise.

- Panzura's vision for providing data for AI and analytic services is excellent; however, the company has been slower to adopt and integrate AI into its own platform to enhance data and metadata search and automate data orchestration. Enhancing this part of the portfolio will help Panzura remain competitive.

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Best Practices & Growth Opportunities

Source: Frost & Sullivan
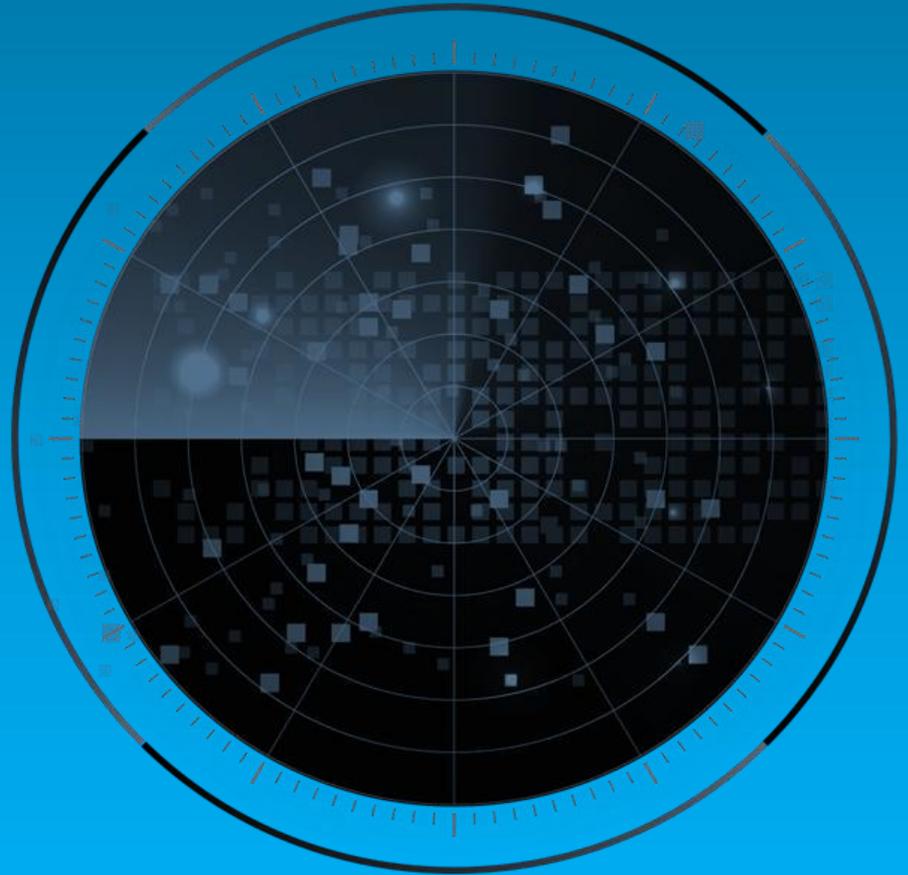
Best Practices

1 Industry-leading providers are leveraging AI in their hybrid storage platform to optimize data placement, ensure efficient resource and capacity management, and automate routine tasks, such as scaling.

2 The best hybrid cloud storage platforms are tracking sustainability metrics relative to the storage footprint and offering data-driven recommendations to improve.

3 Vertical hybrid storage solutions, capabilities, and certifications are being integrated into the strongest platforms.

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Source: Frost & Sullivan

Growth Opportunities

1 For providers not already offering it, increasing the availability of edge-to-cloud hybrid storage will enable better data processing close to points of collection, as well as lower latency and better application performance to geographically dispersed users.

2 Integrated cybersecurity features—especially ransomware protection, such as data immutability and geo-dispersed replication—are quickly becoming table stakes in this industry. Providers not offering enhanced security features and industry-specific security certifications will lag behind competitors and hinder growth.

3 The addition of AIOps into hybrid cloud storage platforms can enhance data orchestration, lessen the data management burden, and optimize storage costs. Hybrid cloud storage providers should integrate AI into their platforms quickly or risk being eclipsed by competitors that are already developing or launching such features.

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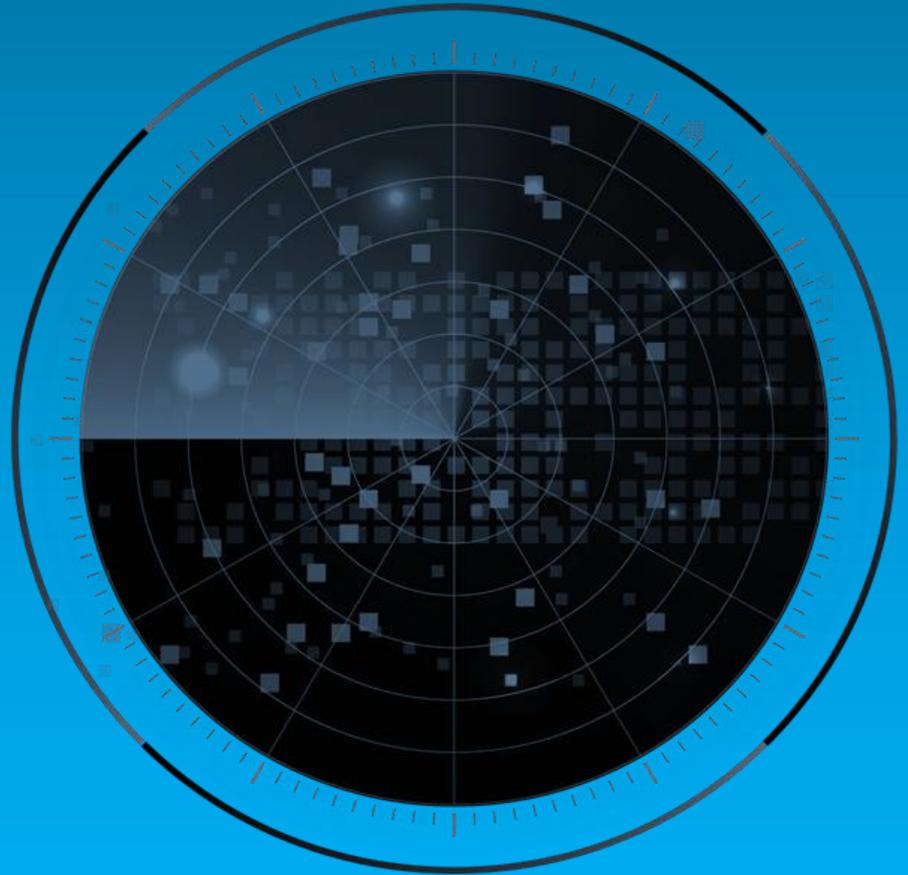
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Frost Radar™ Analytics

Frost Radar™: Benchmarking Future Growth Potential
2 Major Indices, 10 Analytical Ingredients, 1 Platform

Growth Index

Growth Index (GI) is a measure of a company's growth performance and track record, along with its ability to develop and execute a fully aligned growth strategy and vision; a robust growth pipeline system; and effective market, competitor, and end-user focused sales and marketing strategies.

GI1

MARKET SHARE (PREVIOUS 3 YEARS)
This is a comparison of a company's market share relative to its competitors in a given market space for the previous 3 years.

GI2

REVENUE GROWTH (PREVIOUS 3 YEARS)
This is a look at a company's revenue growth rate for the previous 3 years in the market/industry/category that forms the context for the given Frost Radar™.

GI3

GROWTH PIPELINE™
This is an evaluation of the strength and leverage of a company's growth pipeline system to continuously capture, analyze, and prioritize its universe of growth opportunities.

GI4

VISION AND STRATEGY
This is an assessment of how well a company's growth strategy is aligned with its vision. Are the investments that a company is making in new products and markets consistent with the stated vision?

GI5

SALES AND MARKETING
This is a measure of the effectiveness of a company's sales and marketing efforts in helping it drive demand and achieve its growth objectives.

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Source: Frost & Sullivan

Frost Radar™: Benchmarking Future Growth Potential
2 Major Indices, 10 Analytical Ingredients, 1 Platform (continued)

Innovation Index

Innovation Index (II) is a measure of a company's ability to develop products/ services/ solutions (with a clear understanding of disruptive megatrends) that are globally applicable, are able to evolve and expand to serve multiple markets and are aligned to customers' changing needs.

II1

INNOVATION SCALABILITY
This determines whether an organization's innovations are globally scalable and applicable in both developing and mature markets, and also in adjacent and non-adjacent industry verticals.

II2

RESEARCH AND DEVELOPMENT
This is a measure of the efficacy of a company's R&D strategy, as determined by the size of its R&D investment and how it feeds the innovation pipeline.

II3

PRODUCT PORTFOLIO
This is a measure of a company's product portfolio, focusing on the relative contribution of new products to its annual revenue.

II4

MEGATRENDS LEVERAGE
This is an assessment of a company's proactive leverage of evolving, long-term opportunities and new business models, as the foundation of its innovation pipeline. An explanation of megatrends can be found here.

II5

CUSTOMER ALIGNMENT
This evaluates the applicability of a company's products/services/solutions to current and potential customers, as well as how its innovation strategy is influenced by evolving customer needs.

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Source: Frost & Sullivan

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Next Steps: Leveraging the Frost Radar™ to Empower Key Stakeholders

Source: Frost & Sullivan
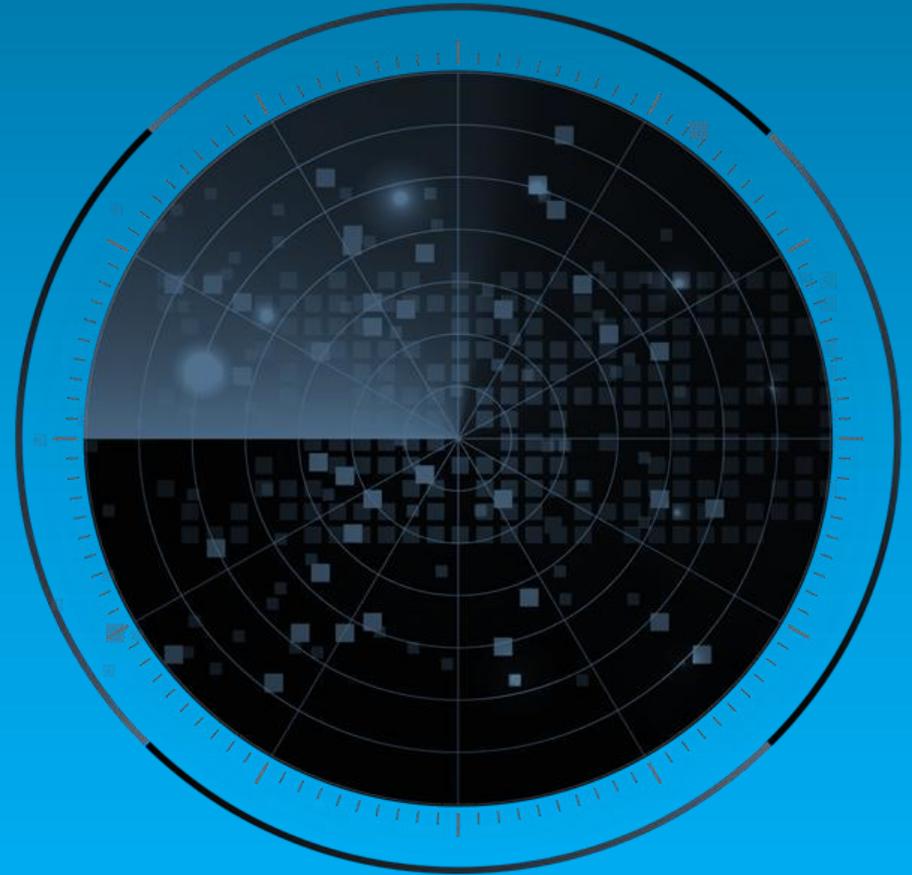
Significance of Being on the Frost Radar™

Companies plotted on the Frost Radar™ are the leaders in the industry for growth, innovation, or both. They are instrumental in advancing the industry into the future.

GROWTH POTENTIAL

Your organization has significant future growth potential, which makes it a Company to Action.

BEST PRACTICES

Your organization is well positioned to shape Growth Pipeline ™ best practices in your industry.

COMPETITIVE INTENSITY

Your organization is one of the key drivers of competitive intensity in the growth environment.

CUSTOMER VALUE

Your organization has demonstrated the ability to significantly enhance its customer value proposition.

PARTNER POTENTIAL

Your organization is top of mind for customers, investors, value chain partners, and future talent as a significant value provider.

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Frost Radar™ Empowers the CEO's Growth Team

STRATEGIC IMPERATIVE	LEVERAGING THE FROST RADAR ™	NEXT STEPS
• Growth is increasingly difficult to achieve. • Competitive intensity is high. • More collaboration, teamwork, and focus are needed. • The growth environment is complex.	• The Growth Team has the tools needed to foster a collaborative environment among the entire management team to drive best practices. • The Growth Team has a measurement platform to assess future growth potential. • The Growth Team has the ability to support the CEO with a powerful Growth Pipeline™.	• **Growth Pipeline Audit™** • **Growth Pipeline as a Service™** • **Growth Pipeline™ Dialogue with Team Frost**

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Frost Radar™ Empowers Investors

STRATEGIC IMPERATIVE	LEVERAGING THE FROST RADAR ™	NEXT STEPS

STRATEGIC IMPERATIVE

- Deal flow is low and competition is high.

- Due diligence is hampered by industry complexity.

- Portfolio management is not effective.

LEVERAGING THE FROST RADAR ™

- Investors can focus on future growth potential by creating a powerful pipeline of Companies to Action for high-potential investments.

- Investors can perform due diligence that improves accuracy and accelerates the deal process.

- Investors can realize the maximum internal rate of return and ensure long-term success for shareholders

- Investors can continually benchmark performance with best practices for optimal portfolio management.

NEXT STEPS

- **Growth Pipeline™ Dialogue**

- **Opportunity Universe Workshop**

- **Growth Pipeline Audit™ as Mandated Due Diligence**

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Frost Radar™ Empowers Customers

STRATEGIC IMPERATIVE	**LEVERAGING THE FROST RADAR ™**	**NEXT STEPS**

STRATEGIC IMPERATIVE

- Solutions are increasingly complex and have long-term implications.

- Vendor solutions can be confusing.

- Vendor volatility adds to the uncertainty.

LEVERAGING THE FROST RADAR ™

- Customers have an analytical framework to benchmark potential vendors and identify partners that will provide powerful, long-term solutions.

- Customers can evaluate the most innovative solutions and understand how different solutions would meet their needs.

- Customers gain a long-term perspective on vendor partnerships.

NEXT STEPS

- **Growth Pipeline™ Dialogue**

- **Growth Pipeline™ Diagnostic**

- **Frost Radar™ Benchmarking System**

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Frost Radar™ Empowers the Board of Directors

STRATEGIC IMPERATIVE

- Growth is increasingly difficult; CEOs require guidance.

- The Growth Environment requires complex navigational skills.

- The customer value chain is changing.

LEVERAGING THE FROST RADAR ™

- The Board of Directors has a unique measurement system to ensure oversight of the company's long-term success.

- The Board of Directors has a discussion platform that centers on the driving issues, benchmarks, and best practices that will protect shareholder investment.

- The Board of Directors can ensure skillful mentoring, support, and governance of the CEO to maximize future growth potential.

NEXT STEPS

- **Growth Pipeline Audit™**

- **Growth Pipeline as a Service™**

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Next Steps

Transformation — Ecosystem — Growth Generator — **Growth Opportunities** — **Frost Radar™** — Best Practices — Companies to Action

JOIN:
Growth Council

APPLY:
Companies to Action

ENGAGE:
Growth Dialog

PARTICIPATE:
Growth Council Think Tank
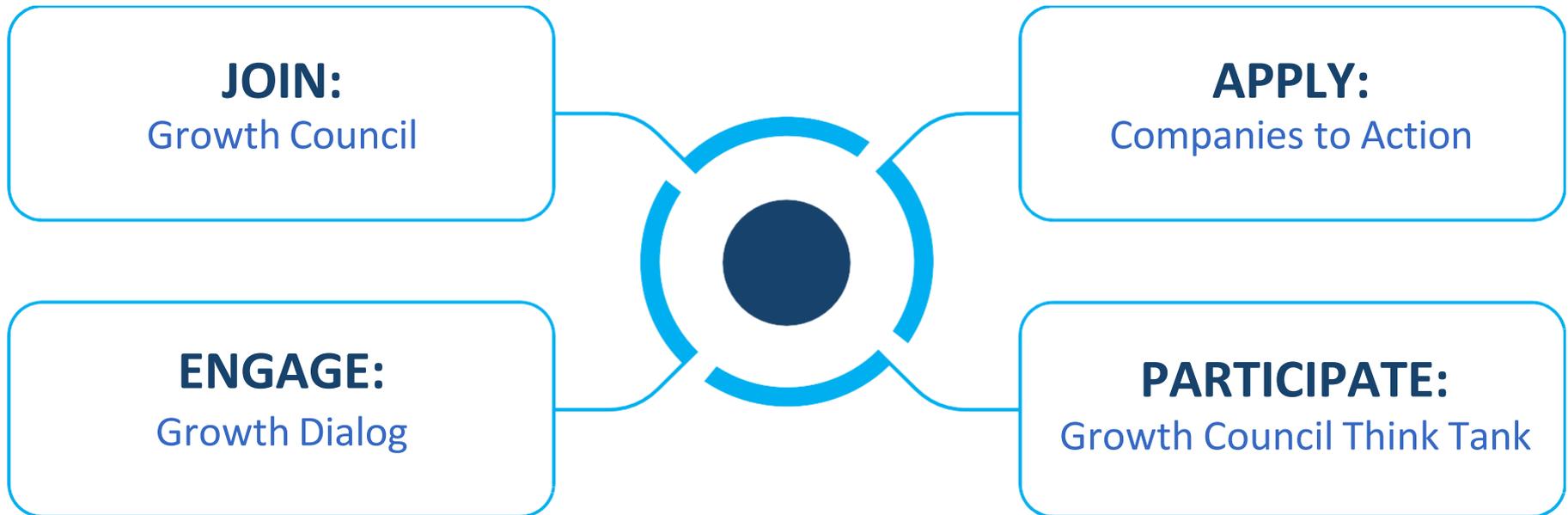
Does your current system support rapid adaptation to emerging opportunities?

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