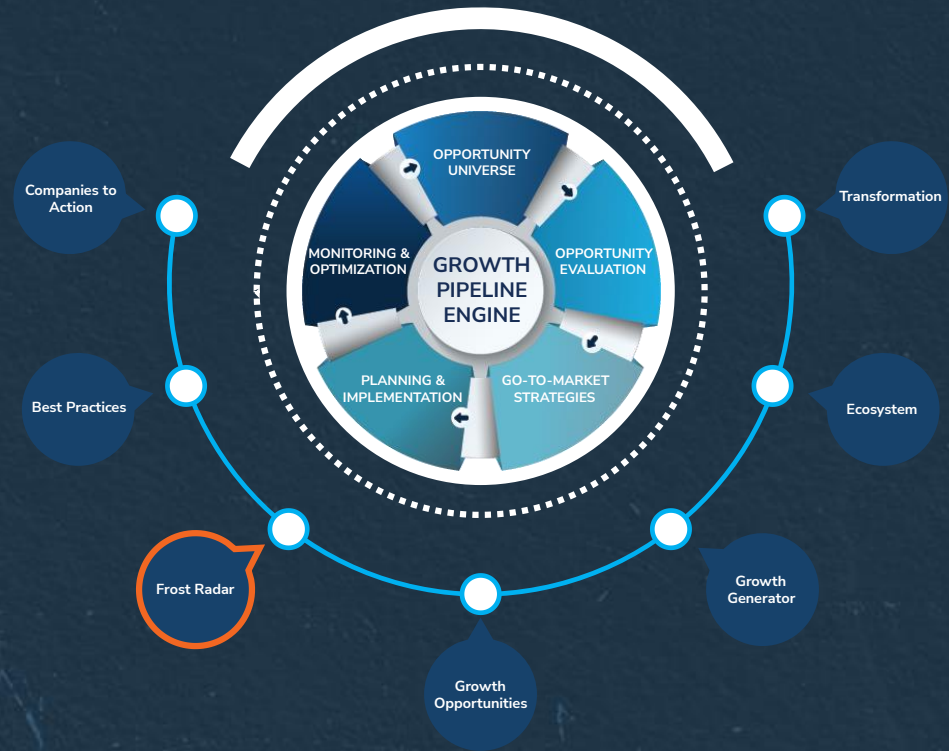


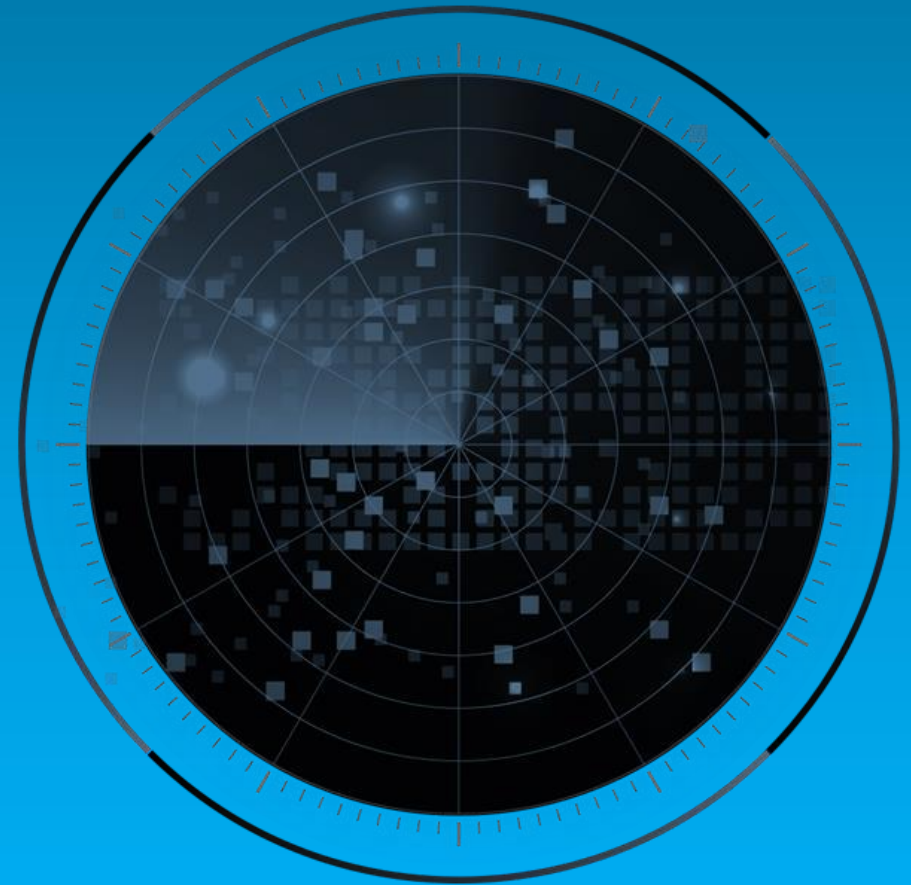
Frost Radar™: Healthcare Data Interoperability, 2024

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



September 2024

Strategic Imperative and Growth Environment



Strategic Imperative

- As the volume of healthcare data increases, organizations have become dependent on healthcare IT tools to connect the data and derive relevant insights from it. In this environment, interoperability solutions are critical in streamlining the data and giving a complete view to end users.
- Most electronic health record (EHR) vendors have incorporated interoperability as a fundamental feature of their IT offerings. Whether they integrate with multiple healthcare information exchange (HIE) platforms or develop third-party applications through an open API architecture, EHR vendors are demonstrating a commitment to provide superior data interoperability features that meet the needs of payers, providers, and government agencies.
- The need of the hour is to create enterprise-wide platforms that will ingest data from different sources, clean and structure it, and analyze it to derive potential insights. This is achievable by connecting existing technology infrastructure with a data platform through APIs that collect the data and convert it into useful information based on interoperability standards.
- Interoperability initiatives—while creating data sharing and coordinated care pathways—also introduce cybersecurity risks. The shift of care closer to the patient's location and the extensive use of remote patient monitoring (RPM) devices will add to the complexity and make healthcare data more vulnerable, prompting extensive investment in cybersecurity initiatives.

Growth Environment

- The healthcare data interoperability market will reach \$19.28 billion by 2028, increasing at a compound annual growth rate (CAGR) of 18.3% between 2023 and 2028.
- Regulatory push from different organizations is putting pressure on payers and providers to fast-track interoperability initiatives and develop communication systems and protocols that will ensure the seamless flow of information between all stakeholders, either through APIs or semantic interoperability.
- The push to utilize fast healthcare interoperability resources (FHIR) as the common data exchange language and the inception of various national alliances support stakeholders in developing solutions that can act across organizations and move the industry toward its desired future state.
- The growing trend of healthcare mergers and acquisitions (M&As) will increase demand for interoperability solutions. As the combined organizations look to build synergies, heavy API use will follow, creating the need for application integration tools to build connected systems.
- Healthcare is shifting to virtual and at-home models, so the need for different systems and devices to communicate and collaborate will be paramount to ensure everyone receives optimal levels of care.
- With more care avenues added to the patient's healthcare journey (because of retail health expansion, M&As, pharmacists' increasing power, and telehealth portals), it will be pertinent to merge the patient's data into a single view. The MPI segment will grow quickly during the forecast period, and vendors will make efforts to build a national MPI in addition to creating enterprise MPIs. Regulatory pushes will support these vendors' efforts and demand national-level patient identifiers to help patients move their records along with them.

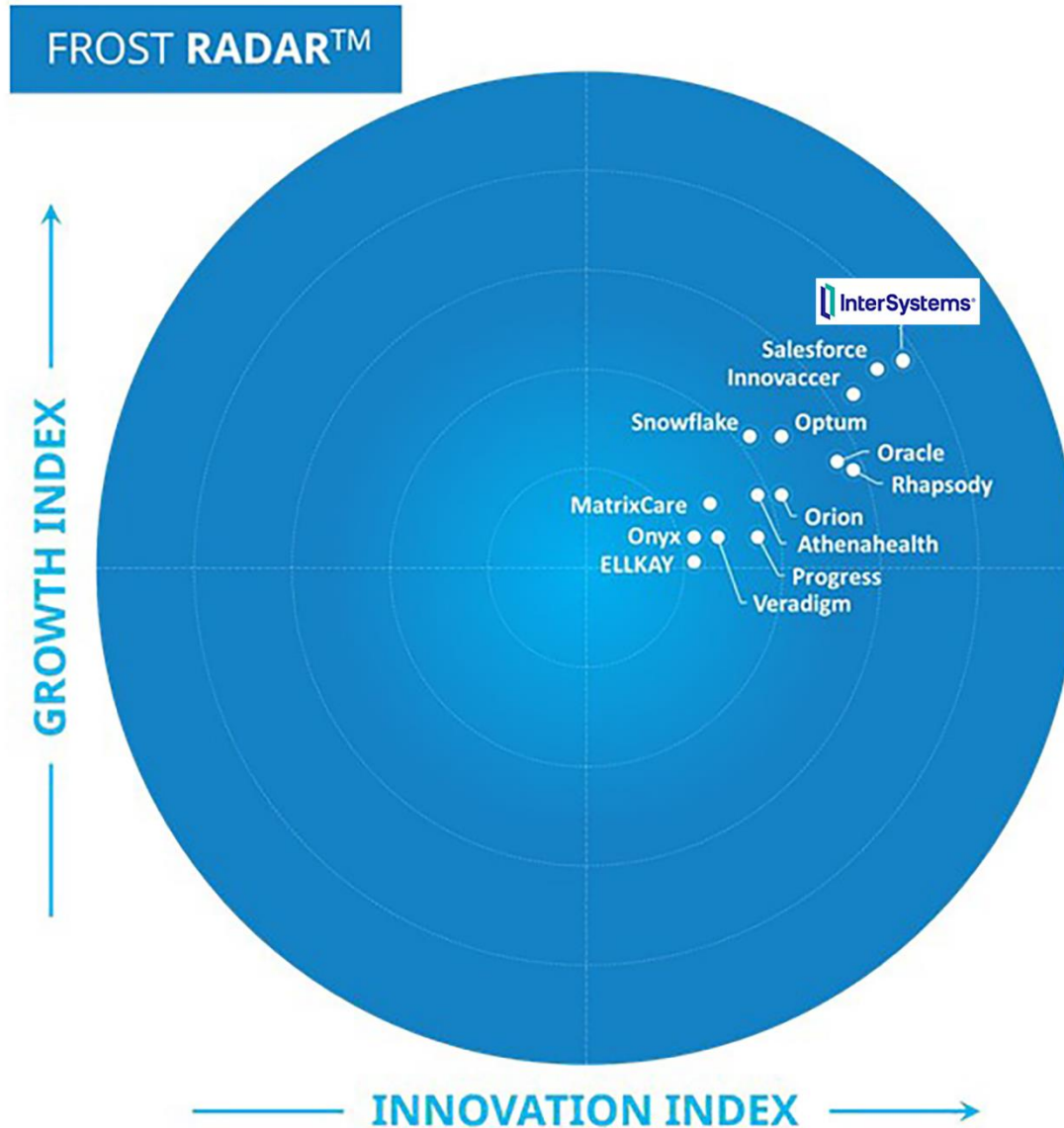
Growth Environment (continued)

- EHR vendors are developing solutions that allow the transfer of patient records within their system. Meanwhile, technology giants are investing resources in creating a unified data lake that can support organizations in creating a single view of the patient. Established vendors, which are trying to develop an MPI for organizations, support this transition.
- For the next 2 to 3 years, emphasis will remain on integration rather than semantic interoperability. However, as organizations reach their peak of integration, they will increase focus on semantic interoperability to support data exchange both within and between organizations.

Frost Radar™: Healthcare Data Interoperability, 2024



Frost Radar™: Healthcare Data Interoperability



Frost Radar™ Competitive Environment

- Frost & Sullivan screened and analyzed more than 80 healthcare data interoperability solution vendors and short-listed 14 companies based on a detailed analysis of their corporate growth potential and ability to drive visionary innovation in this space. These companies represent the best mix of those that have a presence in more than one segment and enable healthcare organizations to improve data management and orchestration by easing data exchange among internal and external data sources.
- The Frost Radar™ features athenahealth, ELLKAY, Innovaccer, InterSystems, MatrixCare, Onyx Technology, Optum, Oracle (also referred to as Oracle Health), Orion Health, Progress Software Corporation (Progress), Rhapsody, Salesforce, Snowflake, and Veradigm. While many other companies are engaging in the healthcare data interoperability space, Frost & Sullivan has identified these 14 organizations as market leaders.
- The companies that offer enterprise-wide solutions, link internal and external data from siloed sources within the EHR workflow, provide analytical support for data-driven decision-making, and incorporate emerging technologies to automate end-users' roles in data aggregation and transformation are leading the market.
- The Frost Radar™ measures the growth rate in addition to absolute revenues and combines them with several other factors to measure companies' performance along the Growth Axis. This is important to mention because companies such as Optum, Oracle Health, athenahealth, Progress Software, and Salesforce have relatively high overall revenues in absolute terms; however, only revenues for their interoperability product segment are deduced and considered for this research.

Frost Radar™ Competitive Environment (continued)

- A few factors differentiating the top 3 players including InterSystems—from the other market participants are their significant investments in building enterprise-wide solutions, speed and time to implementation, ability to scale their platform based on enterprise needs, and the availability to link multiple data sources to create a holistic view of the patient.

Frost Radar™: Companies to Action



InterSystems

INNOVATION

- InterSystems is spearheading the transition to enterprise interoperability through smart data fabrics that provide the required architecture to access, transform, and harmonize data from multiple sources, on demand, to make it usable and actionable.
- The company designed its new menu-based product offering to meet customers where they are on their interoperability journey and facilitate easy scale-up to an advanced interoperability state.
- InterSystems' new solution, Health Gateway Service, connects the different national organization and provide users with a single view of national-level data in either FHIR bundles, CDA documents, or visualization and analytics using the embedded viewer.
- The company is also venturing into adjacent markets, for instance, by enabling information exchange at the community, state, and federal level. These areas are still their infancy and are less standardized, providing InterSystems an opportunity to make early headway.
- InterSystems is looking to utilize augmented intelligence to propel its solutions. The company is using AI/ML to improve data quality and is adopting generative AI to build integrations. For instance, it showcased FHIR-based feed to OMOP research data models at HIMSS24.
- Investment in Gen AI to support interoperability initiatives, with both the data fabric and in end products, enables data transformation, quality check, cataloguing, and making data AI-ready for further use. The company has also released a Gen AI-based low-code platform for users to build a quick data transformation model.

InterSystems (continued)

INNOVATION

- In 2024, InterSystems introduced two new cloud-native smart data services: InterSystems IRIS Cloud SQL and InterSystems IRIS Cloud IntegratedML. These services empower developers to build real-time data-intensive applications. In addition, it released the newest iteration of the IRIS Data platform.
- In December 2023, it launched the TrakCare Assistant to improve providers' workflow by enabling quick access to patient information via text queries, including performing voice-based queries. This frees up the provider's time that can be spent in direct patient care.
- The company keeps a close eye on customer requirements and aims to optimize its offerings by continually working on customer feedback. This includes the May 2023 launch of HealthShare Health Connect Cloud in AWS Marketplace, which addresses customers' need for scalable healthcare integration solutions.
- On the life sciences side, InterSystems is building solutions to satisfy demand for real-world data (RWD) to accelerate clinical trials and bring drugs to market faster.

InterSystems (continued)

GROWTH

- InterSystems has a broad array of end users, including payers, providers, life sciences companies, health IT vendors, laboratories, and medtech companies. Its versatile IRIS platform forms the backbone of in-house or third-party developed applications.
- The company's interoperability solutions span 4 categories: comprehensive health information systems (EHR support), unified longitudinal healthcare records, analytics and solutions components, and development technologies.
- The IRIS platform connects and collates data from different systems (e.g., EHR, revenue cycle management, consumer wearables, labs) to generate a single view of the patient. It opens the gateway to developing interoperable solutions that can integrate (using FHIR, APIs, and other languages) to develop connected systems. The platform now supports data from 220 unique applications and connected EMRs to home-based devices in virtual hospitals and for telehealth.
- In August 2023, the company announced the integration of cancer registry data from patients across the West Midlands, UK, into InterSystems HealthShare to facilitate faster and more informed care decisions for clinicians.
- InterSystems actively participates in and sponsors different events at major healthcare conferences to showcase its leading suite of interoperable products and highlight and grow its ecosystem. The company also expanded its Startup Program so emerging players can work with InterSystems Data platform and build solutions that target the healthcare industry's pain points.

InterSystems (continued)

GROWTH

- In 2023, InterSystems solidified its presence in Southeast Asia by forming partnerships with major firms, such as Ascertain, Doxa, Imagelink Software, Zi.care, BitHealth, and Jonda Health, to streamline data management and workflow orchestration as well as drive innovation across the finance, procurement, and healthcare sectors in the region.
- The company also provides its platform abilities to other health IT vendors, such as supply chain and asset management vendors, to improve their data management capabilities and enhance data-driven decision-making capabilities.
- InterSystems is expanding its platform application in the home care space. In fact, it recently partnered with Pria to enhance patient outcomes and streamline at-home care delivery. By leveraging InterSystems Health Connect Cloud, Pria integrates its patient-centric care platform with electronic medical records to facilitate seamless monitoring and management of chronic care plans.

InterSystems (continued)

FROST PERSPECTIVE

- InterSystems has emerged as market leader in the healthcare data interoperability Frost Radar™. The company's commitment to simplifying data unification and providing customers with the optional service packs provide a peak into its growth potential.
- Also, the company's customer-centric view on new product/feature development has led to 90% of the R&D projects being based on customer feedback and input. Only 10% of its R&D initiatives are blue-sky or internally driven.
- With the capability to target a multitude of customers, payers, providers, health IT vendors, and life sciences companies, InterSystems has developed a strong ecosystem to power different organizations in their interoperability initiatives, either on the front or at the back-end.
- To maintain its leadership position, the company should work on driving discussion on the adoption and evolution of new standards in healthcare data exchange.
- In terms of product development, the company should offer solutions that enable system-to-system communication with a human-in-the-loop to verify crucial information. With its expanded reach and foray into adjacent markets, InterSystems is in a great position to enhance semantic interoperability and take the discussion to the next level.

Best Practices & Growth Opportunities



Best Practices

1

To achieve interoperability, major healthcare stakeholders must invest in digital infrastructure capabilities that facilitate cross-continuum patient information exchange and support evidence-based care. The healthcare ecosystem needs to overcome its financial and technological challenges, such as product prioritization, ROI, constant product updates, and a changing technology landscape, to achieve the desired future state.

2

Enterprise data exchange will become the minimum requirement from interoperability vendors. The leading market players have doubled down on their investment in AI/ML/NLP to improve data aggregation, searching, and analytics capabilities.

3

Market leaders must bridge the gap between care delivery and data sharing within and outside the boundary of care delivery organizations. They are developing solutions to plug into the payer and provider IT system and to enable data exchange among laboratories, pharmaceutical companies, and wearable devices.

Growth Opportunities

1

The biggest barrier facing the interoperable solution is harmonizing the data set and converting it within different product-specific modules. Generative AI could be a game-changing technology in this space, because it could support both data harmonization and model conversions. This approach would provide an opportunity for niche players to develop on-point solutions for major challenges plaguing healthcare systems, such as data centralization and deduplication.

2

In the future, interoperability will lead to accessing data from patient-owned devices and establish two-way communication, orchestrated by digital front doors, with patients. Advanced technologies will increase the breadth of data acquired, quicken the process of converting data between different standards, and enhance analytical processes to derive prescriptive and predictive insights for end users.

3

In addition to creating data flow between patients, providers, and payers, market leaders and new entrants should develop solutions to include other industry players, such as life science companies, laboratories, and pharmacies, to create a unified data aggregation and analysis platform, providing the end user with in-depth insights to oversee and control the complete patient journey.

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.

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 Mega Trends) that are globally applicable, are able to evolve and expand to serve multiple markets and are aligned to customers' changing needs.



III

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

MEGA TRENDS 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 Mega Trends 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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