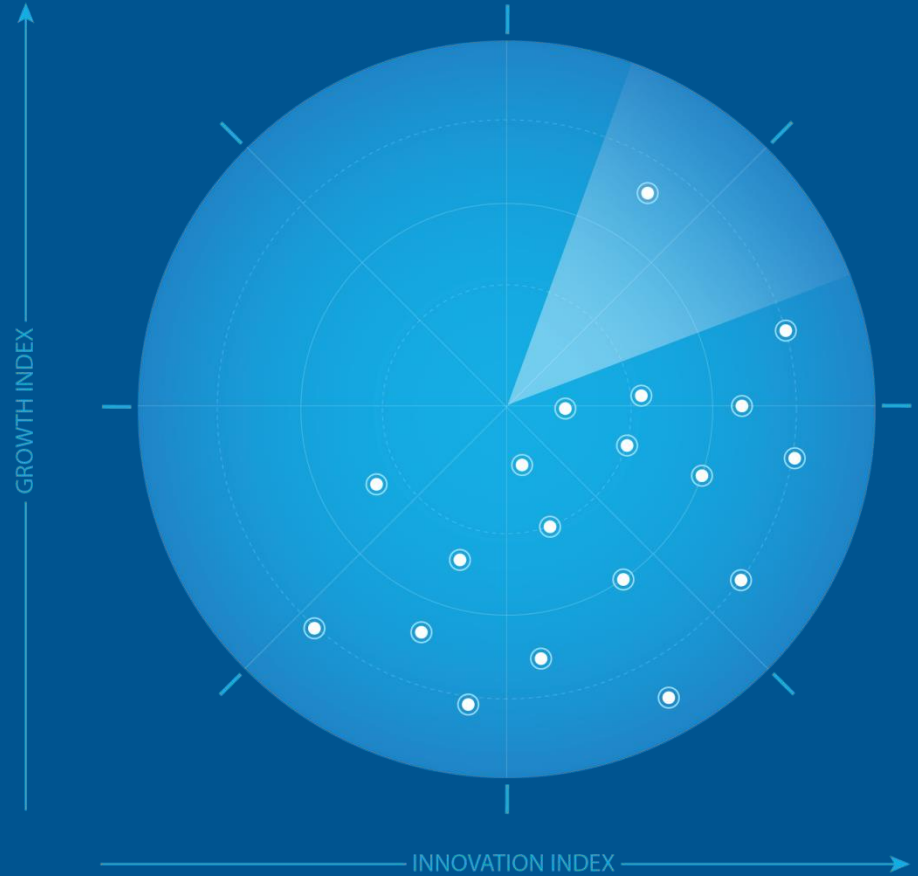


# Frost Radar™: US Healthcare Data Interoperability Market, 2020

Benchmarking Future  
Growth Potential

Global Healthcare Research  
Team at Frost & Sullivan



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Author: Koustav Chatterjee

# Strategic Imperative and Growth Environment



# Strategic Imperative

- **Interoperability has become a critical consideration for all health IT (HIT) applications.** All the major healthcare stakeholders across the world acknowledge the need to invest in digital infrastructure capabilities to facilitate cross-continuum patient information exchanges and support evidence-based care, at scale.
- **Regulatory agencies are embracing forward-thinking policies that advocate the need for all the leading vendors to become fully interoperable with each other.** The objective is to drive a progressive digital healthcare model, that is, a standardized, collaborative, and multidisciplinary yet modular approach that is based on an application programming interface (API).
- **Many leading HIT vendors and hospitals in the United States are not likely to comply with CMS' 21<sup>st</sup> Century Cures Act,** although it makes provisions for the secure transfer of patient data across the care continuum (due to threats such as breach of patient privacy) and the overwhelming cost of commitment; provisions also exist to cover any significant penalties involved.
- **Owing to COVID-19, most health systems' essential services** (both, manually driven and digitally enabled) **are focused on tackling the unprecedented surge in patient footprint** across primary, in-patient, and long-term care systems. Therefore, ONC in collaboration with CMS and HHS OIG has extended the timeline for the implementation of Interoperability Final Rules to 3 months post completion of the ONC Health IT Certification Program for specific value-based care tracks.

CMS—Centers for Medicare & Medicaid Services; ONC—The Office of the National Coordinator for Health Information Technology; HHS OIG—U.S. Department of Health and Human Services Office of Inspector General.

Source: Frost & Sullivan

# Strategic Imperative (continued)

- **Traditional information and communications technology (ICT) companies, including Apple, AWS, Cisco, Google, Microsoft, Oracle, Salesforce, and SAP, are taking the lead in terms of supporting large health systems with integrated HIT infrastructure capabilities** that help to prevent data blocking and aid in seamless data interoperability between electronic medical records (EMRs), medical device platforms, revenue cycle management (RCM) platforms, telehealth solutions, population health management (PHM) systems, and clinical decision support system (CDSS) tools at an ecosystem level across the United States.
- **As a result, the onus is on these companies to bridge the data gaps in the care continuum on behalf of the large integrated health systems they support** (payers, providers, pharmaceutical companies, and government agencies).
- **Hence, the US healthcare data interoperability market is moving toward a consolidated sourcing and procurement outlook**, and the government will play a key role in terms of standardizing the fundamental framework for large ICT participants, core health information exchanges (HIEs), medical device connectivity platforms, API integrators, data warehouse solution providers, and data visualizers.
- **PHM and chronic disease management (against the backdrop of the pandemic) will drive further innovation** in the HIT ecosystem, catalyzing collaboration and fostering competition to make HIE a seamless experience for providers.

Source: Frost & Sullivan

# Growth Environment

- The global healthcare data interoperability market is valued at \$4.92 billion in 2020, and the US market is projected to contribute \$3.3 billion (67.07%).
- However, the US market is expected to record lower-than-estimated revenue growth in 2020 due to COVID-19, which has restrained Chief Information Officers' interest in the undertaking of cost-intensive and long-term data interoperability projects; instead, CIOs are prioritizing other IT investments, including healthcare artificial intelligence (AI) for CDSS, patient access management, telehealth, teleradiology, and digital command centers for specific departments and episodes of care.
- Frost & Sullivan expects departmental interoperability within a health system to remain significant during the pandemic as it facilitates the personalization of administrative, clinical, and financial intervention based on patients' own history of COVID-19 or proximity to regional hotspots.
- Moreover, reporting of quality outcomes will continue to be an important aspect of all value-based care contracts. Thus, care coordination solutions that are aided by data interoperability features and help to stratify patient risk for infectious diseases, benchmark outcomes, and virtually report these metrics to multiple payers in real time will gain traction.
- Payers will also use these solutions extensively to manage member performance and proactively reach out to patients looking to gain knowledge about health reimbursement plans during the pandemic (provisions for complimentary coverage, 100% reimbursement, and additional incentives, for instance).

Source: Frost & Sullivan

# Growth Environment (continued)

- ICT companies aim to democratize patient information at a national level through progressive data interoperability solutions that aid visionary innovation in the field of clinical research for antibodies, biomarkers, clinical trials, immunotherapy, the Internet of Medical Things (IoMT), and vaccines.
- These companies' own R&D investments in data interoperability, coupled with support from large health systems and government agencies, will bring about some degree of spend equilibrium in the market and may restore revenue growth to pre-pandemic levels by the end of 2020.
- Frost & Sullivan has identified 5 major growth opportunities for the US healthcare data interoperability market, as depicted below:

API Management	HIE	Data Management	EMR Integration	Medical Device Connectivity
<ul style="list-style-type: none"> <li>• Launch of API partnership platforms to achieve cross-continuum connectivity</li> <li>• Deployment of cloud API solutions that are compatible with FHIR, HL7v2, and DICOM</li> <li>• Development of API rules engines that comply with HIPAA and HITRUST</li> <li>• Adoption of full lifecycle APIs to leverage medical data at the enterprise level</li> </ul>	<ul style="list-style-type: none"> <li>• Establishment of a centralized infrastructure platform to enable delivery of actionable health data</li> <li>• Development of an enterprise master patient index</li> <li>• Comparison of patient utilization rates across various healthcare departments at a payer, provider, and/or regional level</li> <li>• Ability to combine patients' clinical, financial, and operational data to support personalized decisions</li> </ul>	<ul style="list-style-type: none"> <li>• Setting up of cloud or on-premise data centers that comprise actionable healthcare intelligence, indicative of past patterns of diseases, payment fraud, and operational inefficiencies</li> <li>• Establishment of data centers that can be leveraged to vet AI technologies</li> </ul>	<ul style="list-style-type: none"> <li>• Acceptance of seamless API and HIE partnerships</li> <li>• Data interoperability among disparate EMR platforms within a defined healthcare network</li> <li>• Introduction of EMR interoperability certification and consulting services business</li> </ul>	<ul style="list-style-type: none"> <li>• Real-time assessment of patient-generated data by care episodes and patient population</li> <li>• Online benchmarking of clinical effectiveness at a provider, community, and regional level</li> <li>• Regulatory compliance benchmarking</li> </ul>

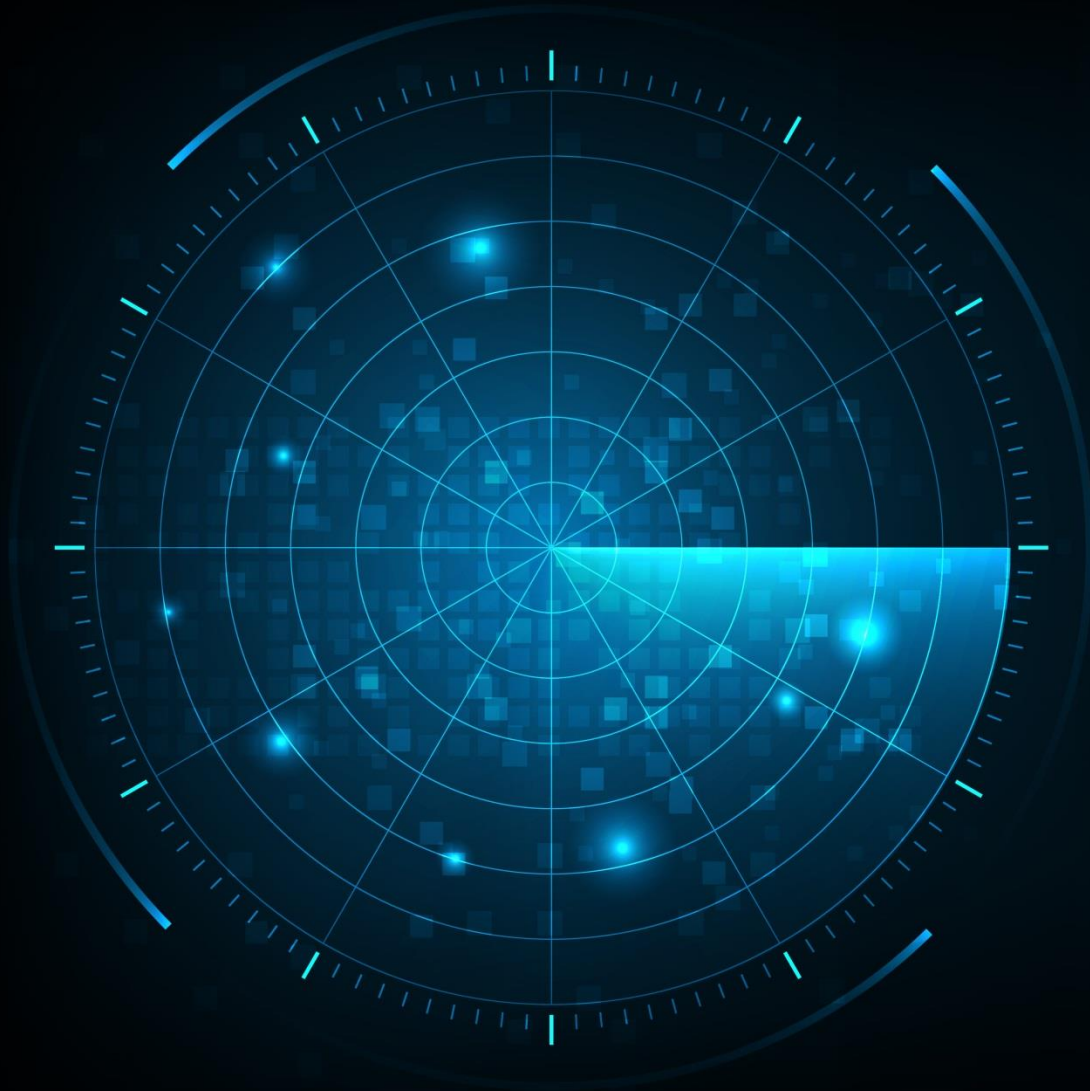
FHIR—Fast Healthcare Interoperability Resources. HL7v2 = Health Level Seven International Version 2.

DICOM—Digital Imaging and Communications in Medicine. HIPAA = Health Insurance Portability and Accountability Act.

HITRUST—Health Information Trust Alliance.

Source: Frost & Sullivan

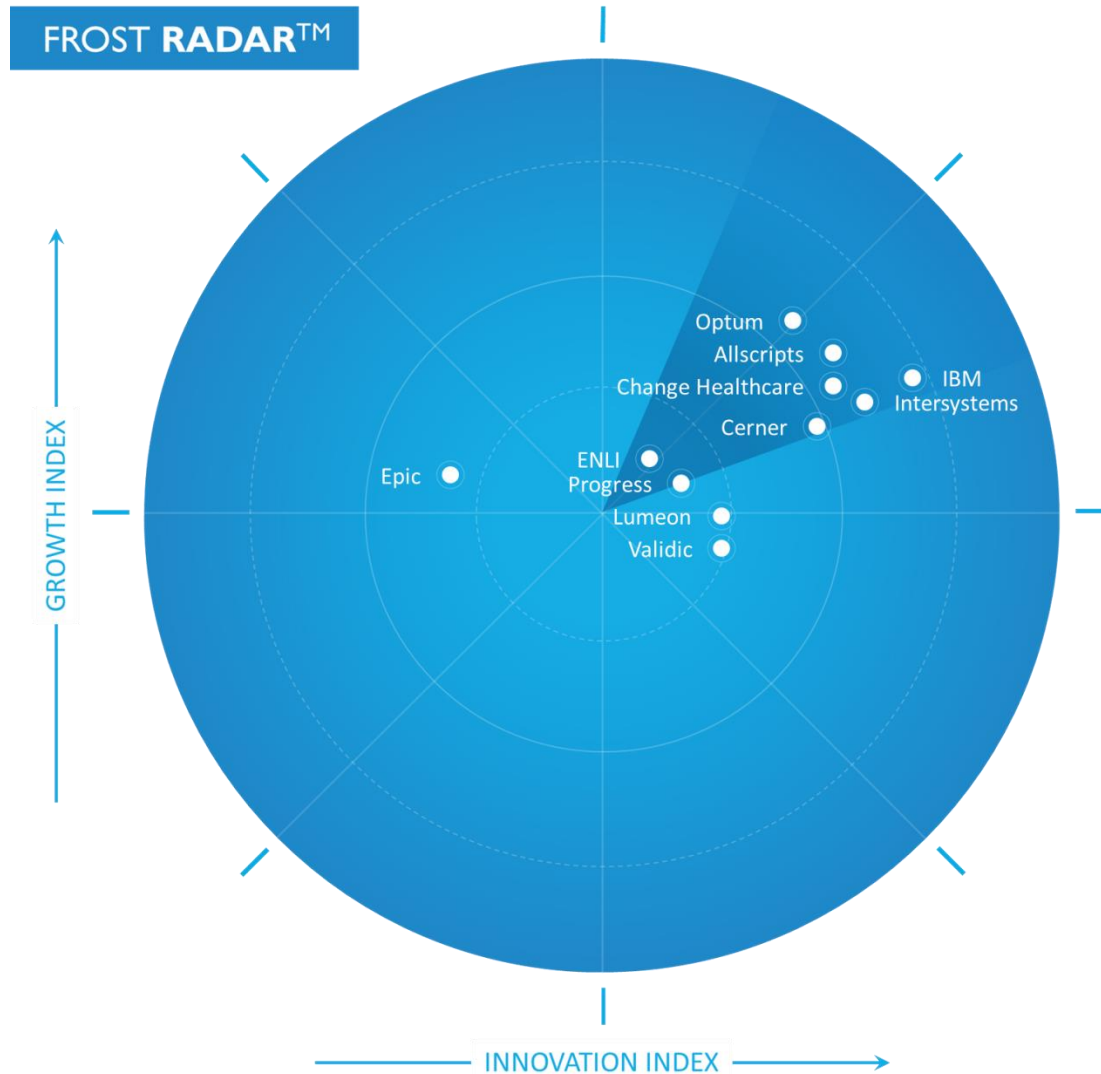




## Frost Radar™

**US Healthcare Data  
Interoperability Market,  
2020**

# Frost Radar™: Healthcare Data Interoperability Market 2020



Source: Frost & Sullivan

# Frost Radar™: Competitive Environment

- Frost & Sullivan screened and analyzed more than 50 US healthcare data interoperability market participants. 25 companies were shortlisted based on a detailed analysis of their corporate growth potential and ability to drive visionary innovation in healthcare data interoperability solutions. Of these, 11 were chosen to be plotted on the Frost Radar™ as they represented the best mix of companies that offer enterprise-grade and modular healthcare data interoperability solutions.
- **Allscripts, IBM, Change Healthcare, and InterSystems** are the leading US healthcare data interoperability market participants marked on the Frost Radar™.
- **Optum** is the fastest-growing company, thanks to its best-in class performance analytics and PHM solutions that connect with all major data sources and deliver actionable intelligence in customers' existing clinical, financial, and operational workflows through cloud, on-premise, or API-based integrations.
- **IBM** is the most innovative healthcare data interoperability company. Its pioneering FHIR Server can host disparate data connectors, HIEs, and HIT systems to normalize patient data at scale and make it compatible for cross-continuum data portability.
- **Allscripts'** EMR, PHM, patient engagement, and clinical genomics (2bPrecise) platforms facilitate robust data connections within its own network of patients, payers, pharma enterprises, and providers and among third-party HIEs, CDSSs, mHealth tools, and medical devices as well. The company's API partnership program and its advanced HL7 v2 FHIR-based interoperability features support interdisciplinary data exchanges, shares, and downloads.

Source: Frost & Sullivan

# Frost Radar™: Competitive Environment (continued)

- **Change Healthcare** and **InterSystems** are leading interoperability vendors that democratize access to patient data through open and collaborative services, tools, and platforms. As a result, data-driven interventions are possible at every level of the healthcare ecosystem, and patients are fully aware of their clinical, financial, and operational attributions.
- **Cerner** has secured a position of leadership on the Frost Radar™, and it is the only other EMR company to find a place in the leadership cluster and is ranked after Allscripts. This is mainly due to its recent investments in making its solutions truly interoperable at a national level, that is, interoperability beyond its own legacy EMR, PHM, patient engagement and RCM networks.
- **Enli and Progress** are also Frost Radar™ leaders, thanks to their vertical specialization around quality outcomes reporting at the enterprise level and core ICT-based data interoperability services, respectively.
- **Lumeon, Validic, Epic** are equally important and impressive due to their ongoing work around digital command center (**Lumeon**), patient-generated data streaming through medical device and app connectivity (**Validic**), and closed-loop data portability (**Epic**).

A Frost & Sullivan study related to this independent analysis is:

- K418: The Global Healthcare Data Interoperability Market, 2019-2024

Source: Frost & Sullivan

# **Companies to Action**

**Companies to be Considered First  
for Investment, Partnerships, or  
Benchmarking**

# Allscripts Healthcare, LLC

## FROST RADAR™ LOCATION

- Among the leading EMR companies plotted on the Frost Radar™, Allscripts secured the top spot as it was able to demonstrate superior interoperability capabilities across the HIT ecosystem. It offers best-in-class growth and innovation strategies.
- The company's interoperability solutions facilitate seamless data portability across all its major products, including 2bPrecise™, dbMotion, FollowMy Health®, Sunrise EMR, and TouchWorks® EHR.

## INNOVATION

- Allscripts pioneers the provision of enterprise-level interoperability-aided EMR (Sunrise EMR, TouchWorks® EHR) workflow adjustments and the subsequent clinical decision making from a single window.
- The company incorporates SMART on FHIR across its product portfolio and strongly advocates CMS and ONC provisions (under the 21<sup>st</sup> Century Cures Act) for interoperability and patient access management.
- These progressive standards enable the direct integration of third-party clinical decision support applications into Allscripts' platforms through on-premise or cloud deployment models.

## GROWTH

- Allscripts' strong growth is aided by its open API initiatives, which are powered by the largest group of third-party API developers (4,000) in the United States.
- The Allscripts Developer Program is another growth enabler that helps the company achieve seamless integration between clinical genomics, EMR, patient engagement, and PHM platforms for holistic patient management.
- Customers can exchange patient information within Allscripts' platforms and across most disparate health systems almost seamlessly and at scale.

## NEXT STEPS

- Allscripts can continue to augment its EMR capabilities and integrate cognitive interoperability standards across its HIT workflows.
- Post COVID-19, the company's EMR, patient engagement, PHM, and RCM solutions can be made part of an integrated offering to be able to interface with external health systems and manage medical information. exchanges for a wide variety of stakeholders, including government agencies, patients, payers, and providers.

Source: Frost & Sullivan

# Cerner Corporation

## FROST RADAR™ LOCATION

- After Allscripts, Cerner is the major EMR company to achieve a position of leadership on the Frost Radar™. It scores high on the growth and the innovation indices.
- The company prioritizes EMR interoperability enhancement through open standards such as FHIR.
- It aims to aid clinical data exchanges among patients and providers for evidence-based decision making.

## INNOVATION

- Cerner's emphasis on innovation prompted it to embrace HL7 FHIR-based open API standards to facilitate seamless data exchanges not only within its own solutions but also across the entire HIT ecosystem.
- The company's EMR and PHM solutions collect clinical data from third-party sources or plug-in tools through connections with HIEs, health apps, and state registries as well as organizations such as CommonWell Health Alliance and Care Quality.
- As a result, Cerner is able to send personalized alerts to care teams within and outside health systems and incorporate EMR responses.

## GROWTH

- Cerner's next-generation interoperability standards have helped accelerate its growth among ACOs, group practices, and large hospital systems.
- The company's ability to support clinical and financial data reconciliation for payers and providers is proving to be a best-in-class strategy to speed-up the growth of its EMR and PHM business lines.
- Cerner aims to reimagine referral management through open API-based platforms that enable, track, and monitor patient referrals to specialists.
- In addition, the company's care management suite is a centralized platform that tracks patient progress.

## NEXT STEPS

- Cerner can improve product agility, functionality, and intuitiveness, and it can start with its EMR and PHM platforms.
- As it is a leading EMR company that engages with a large number of HIT product and solutions providers and is able to cater to more than 50% of the US population, it can advocate ONC and CMS's advanced interoperability offerings.
- Cerner can make significant improvements to its interoperability features, and this will help it become a leading market participant by 2023.

ACO—Accountable Care Organization  
Source: Frost & Sullivan

# Change Healthcare

## FROST RADAR™ LOCATION

- Change Healthcare offers network solutions, software, analytics, and technology-enabled services, and it has earned a top spot on the Frost Radar™. It scores higher on innovation than growth, thanks to its progressive solutions portfolio.
- Change Healthcare is one of the few pure-play healthcare data interoperability companies that is committed to the facilitation of clinical and claims data through its IT network; it also embraces open API standards to allow third-party integration across its native solutions.

## INNOVATION

- Change Healthcare's Medical Network solutions enable seamless payer-provider connectivity through API integrations that support benefits eligibility matching, claims management (including pre-authorization in record speed), and patient access management.
- The company's Clinical Network solutions offer a seamless working experience across complex clinical connections in EMR, patient engagement, PHM, and RCM solutions.
- These solutions thrive on HL7 FHIR, which facilitates the exchange of accurate patient information across the care continuum and prevents payment fraud and medical reconciliation.

## GROWTH

- Change Healthcare's ability to offer next-generation clinical, financial, and operational solutions to a wide range of healthcare customers is helping it expand its footprint across the US market.
- Its Intelligent Healthcare Platform allows customers to seamlessly download, exchange, and share patient information in real time.
- In terms of scale, the company processes 14 billion healthcare transactions every year, which represents up to \$1 trillion worth of medical services.

## NEXT STEPS

- Change Healthcare's decision to offer free API-based interoperability services (identity and consent management) so that customers can adhere to CMS provisions during and after the pandemic will help it establish itself as an eminent market participant.
- Change Healthcare can create a holistic data network that will not only cover payers and providers but other major stakeholders as well, including diagnostics providers, government registries, labs, and pharmacies.

Source: Frost & Sullivan



# Enli Health Intelligence

## FROST RADAR™ LOCATION

- Enli is a care coordination company that is listed among the top 10 participants on the Frost Radar™ (its growth and innovation strategies can be considered progressive).
- The company's advanced interoperability solutions offer care management, performance management, and workflow management capabilities to payers and providers.

## INNOVATION

- Enli's interoperability capabilities permit the automated attribution of care programs (pre-configured; based on templates) based on customers' incumbent enrollment into various quality- and risk-based payment plans.
- Moreover, the company's IT deployment approach allows for collaborative decision making among care teams through integrated tools and services that manage contracts through risk analysis and performance forecast. Enli is also able to report contract outcomes daily—on a patient and an episode level.

## GROWTH

- Enli's growth is driven by its wide range of modular capabilities that can be incorporated into customers' existing clinical, financial and operational workflows.
- It works seamlessly with most US EMR companies; it collects medical information to identify gaps in care, highlight financial risk/opportunity across value-based payment plans, and support reporting of quality outcomes (at scale and in real time).
- In-built interoperability standards enable enterprise-level consolidation of patient data and deliver actionable intelligence that helps to standardize care by patient population.

## NEXT STEPS

- Enli can focus on the real-time analysis of providers' care quality performance against regulatory benchmarks and payer targets. It has the capacity to download, exchange, share, analyze, and visualize patient information across the care continuum.
- Recent R&D investments will accelerate the adoption of HL7 FHIR-based interoperability standards across its product portfolio, and Frost & Sullivan predicts that this will help the company improve its position on the Frost Radar™ over the next 2 years.

Source: Frost & Sullivan

# Epic Systems Corporation

## FROST RADAR™ LOCATION

- Epic is a famous EMR company with a growing portfolio of integrated HIT solutions, including interoperability tools and services.
- The company is positioned toward the far left of the Frost Radar™ – it does not earn a place in the leadership cluster, and it scores better on growth than innovation.
- Epic's expertise lies in the facilitation of closed-loop interoperability that supports seamless data exchanges across its network of platforms and solutions that cover more than half of the patient population in the United States.

## INNOVATION

- Epic opposed the 21<sup>st</sup> Century Cures Act's interoperability provisions, which resulted in a relatively low score on the innovation index.
- Nonetheless, the company has made significant investments in innovative interoperability solutions to aid cross-continuum data exchanges within its connected HIT ecosystem.
- However, it lacks the strategic mindset to be truly interoperable, which will allow third-party vendors to export information onto their native platforms from Epic systems.
- App Orchard, the company's online marketplace of third-party app developers, enables open API-based data interoperability.

## GROWTH

- Epic's growth strategy can be characterized as targeted and selective.
- It allows all EMRs that are part of the Carequality network to share information with its own EMR and patient engagement solutions, which works as a proprietary growth strategy.
- Epic also allows third-party customers to view and share patient information through its SaaS-based EMR portal (EpicCare Link, Community Connect), resulting in the consolidation of patient information at scale.
- Third-party vendors/customers/consumers are permitted to view patient records through My Chart.

## NEXT STEPS

- Frost & Sullivan recommends that Epic collaborate more extensively with other EMR, PHM, patient engagement, and RCM companies so that patient data remains portable and accessible across the care continuum.
- The company can step up and embrace advanced interoperability features to improve its position on the Frost Radar™.

Source: Frost & Sullivan

## FROST RADAR™ LOCATION

- IBM is a world-renowned technology giant. Its expanding HIT portfolio is managed by its subsidiary, IBM Watson Health.
- IBM has secured a leadership position on the Frost Radar™, thanks to its visionary capability and stellar performance in the US healthcare data interoperability market, and it has fared well in terms of both growth and innovation.
- The company will continue to witness continued growth, supported by the R&D of advanced healthcare data interoperability features.

## INNOVATION

- IBM's FHIR Server supports the open-source Java implementation of HL7 FHIR R4 specifications. Its competitors are allowed to use its FHIR Server and leverage its benefits, which is a groundbreaking approach to innovation.
- Moreover, the company supports some large health systems and HIT companies by helping them to archive patient information in the desired format and to visualize care plans and quality outcomes at the patient, provider, and community levels.

## GROWTH

- IBM's growth strategy is transforming the US healthcare ecosystem.
- The company's pioneering infrastructure approach enables end-to-end data interoperability not only through point solutions (VNA solutions to archive DICOM and non-DICOM images, for example) but also through infrastructure capability that can convert disparate patient data into a single source of truth. It can also make source systems compatible with each other so that cognitive tools can be applied on them for holistic data-driven decision making.

## NEXT STEPS

- IBM's FHIR Server will help neutralize concerns regarding the privacy and the security of open API-based data interoperability solutions.
- The server should truly enable interdisciplinary patient engagement and support a wide range of healthcare stakeholders to personalize medical intervention at scale and in real time through cognitive capabilities.

Source: Frost & Sullivan

# InterSystems Corporation

## FROST RADAR™ LOCATION

- InterSystems is a prominent IT and IT-enabled managed services company that has earned a top spot on the Frost Radar™.
- The company's end-to-end digital approach toward archiving and unifying care records for the seamless portability of patient information within and across health systems has earned it a superior score on the innovation index.
- InterSystems has the capacity to create a central source of truth beyond EMRs—and it does this for health systems that have to interface with hundreds of disparate medical devices, native EMRs, HIEs, PHM platforms, and other third-party plug-in-based clinical tools.

## INNOVATION

- The company's HealthShare platform unifies care records and connects patients, payers, and providers across the care continuum. It offers coordinated, value-based care and PHM services.
- The HealthShare Health Connect platform acts as a native HIE for health systems and coordinates care across the company's wide network of hospitals, payers, patients, HIT vendors, and regulatory agencies.
- InterSystems IRIS for Health™ applies cognitive algorithms on top of unified patient records and creates actionable intelligence that is accessible across the care continuum.

## GROWTH

- InterSystems is expanding its footprint across the US healthcare data interoperability market by targeting health systems that are struggling to archive and harmonize patient information in accordance to advanced interoperability standards.
- The company has carved a niche for itself as it remains EMR-independent and relies on proprietary data warehouses, data exchanges, and data processing solutions to drive evidence-based healthcare decision making through the cloud, through on-premise deployment, or through the assistance of managed service personnel.

## NEXT STEPS

- Frost & Sullivan recommends that InterSystems combine its HealthShare and its IRIS platforms to be able to offer transformational value to all the major health systems that are currently unable to embrace advanced interoperability features such as HL7 FHIR, thereby enabling data portability across EMRs.
- A pure play healthcare data interoperability company, InterSystems should collaborate with EMR companies to sustain its leadership position and improve its market share.

Source: Frost & Sullivan

# Lumeon

## FROST RADAR™ LOCATION

- Lumeon is a progressive care coordination company that has earned a spot among the top 10 companies on the Frost Radar™. It scores higher on the innovation index than the growth index.
- Lumeon's flagship approach to support care management through a central command center allows health systems to download, exchange, and share patient data seamlessly, at scale, and in real time.

## INNOVATION

- Lumeon has revolutionized care coordination with its care traffic control solution, which acts as a healthcare command center. It visualizes care plans, virtualizes monitoring, and automates routine tasks to ultimately reduce manual intervention and save money for providers.
- For chronic patients, the company offers a system-generated program that includes health plan eligibility assessment, appointment schedules, clinical tasks, disease- and patient-specific educational information, wellness reminders, and virtual coaching.

## GROWTH

- Lumeon's strong growth is driven by its Care Pathway Management (CPM) platform. CPM personalizes care delivery by harmonizing disparate patient data across the care continuum, automating care pathway activities, and delivering coordinated insight to care teams that are tasked with standardizing operations, reducing revenue leakages, and maximizing the use of resources for a defined patient population.
- Such capabilities result in tangible outcomes for Lumeon's core customers.

## NEXT STEPS

- A relatively new market entrant when compared to competitors that offer legacy solutions, Lumeon should work to sustain its position of prominence in the healthcare data interoperability market. It can do this by continuing to take the digital command center approach to large health systems, payers, and physician practices.
- It can also step up its efforts to adopt HL7 FIR-based interoperability features.
- The company's ability to customize offerings by type of patient population and a proven track record of delivering real value to customers will help it further establish itself in the market.

Source: Frost & Sullivan

# Optum, Inc.

## FROST RADAR™ LOCATION

- Optum is a world-leading healthcare information technology solution provider, and it is the fastest-growing healthcare data interoperability company in the United States. It has earned a top spot on the Frost Radar™, and it scores high on the innovation index.
- The company's wide range of products and solutions leverages in-built interoperability features that allow seamless data connection across some leading payers, providers, life science companies, and government agencies.

## INNOVATION

- Optum has made significant investments in the Optum IQ, Optum One, Optum Rx, and Optum 360 platforms to make them 100% compatible with health systems' legacy solutions.
- The company has deployed a team of implementation specialists, whose job is to ensure that optimal results are achieved when its platforms are integrated into customers' existing IT workflows.
- Optum supports CMS's provision for seamless data interoperability at a patient population level (under the 21<sup>st</sup> Century Cures Act), which has paved the way for EMR connectivity through its open and interoperable PHM platform.

## GROWTH

- Optum is growing faster than its competitors, thanks to its proprietary strategy to deliver harmonized medical information to health systems' incumbent clinical, financial, and operational workflows.
- Its Performance Analytics product suite supports HL7 v2 FHIR standards and embraces open API programs to automate data portability across disparate CDSSs, EMRs, patient engagement tools, and RCM tools.
- Optum's strong growth is also fueled by its ability to scale at a country level and work with some of the leading US healthcare companies.

## NEXT STEPS

- As a future growth strategy, Optum should look to extend its support to a wide range of health systems, including its own hospital subsidiaries, who must connect with and learn from each other to aid community health management post COVID-19.
- In addition, Frost & Sullivan recommends that the company invest in interoperability solutions that can be built both in-house and in collaboration with third-party developers, with a focus on vertical capabilities such as clinical decision support, mental health, and social determinants of health (SDoH).

Source: Frost & Sullivan

# Progress Software Corporation

## FROST RADAR™ LOCATION

- Progress offers core ICT solutions and it has secured a leadership position on the Frost Radar™; it has fared well on both the growth and the innovation indices.
- The company's software solutions enable the development of data connectors from scratch, integrate the connectors with native or third-party IT platforms, and support seamless data portability and monitoring across its entire IT network in the United States.
- Moreover, Progress defines advanced interoperability standards for most of its customers.

## INNOVATION

- Progress offers a wide range of progressive solutions, and most of them focus on the development of healthcare data interoperability solutions.
- OpenEdge hosts disparate HIT platforms and helps third-party developers build custom applications that are compatible with them.
- In 2019, Progress acquired Ipswitch, a leading provider of secure data transfer and network management software.
- Progress also offers strong managed care services that include troubleshooting of customers' entire IT networks.

## GROWTH

- Progress is witnessing moderate growth due to a limited operations portfolio—it is primarily involved in the building of foundational interoperability architecture for a variety of customers (including other HIT vendors) through outsourcing.
- However, the company has been able to carve a niche for itself with its interoperability solutions—they are not only available as products but also as standards. Customers can avail consultations to increase knowledge; licenses are also available.

## NEXT STEPS

- Progress is anticipated to witness incremental growth over the next 2-3 years, and it will be able to achieve this by offering consulting, training, implementation, and outsourcing services (IT enabled).
- Frost & Sullivan recommends that the company target health systems that want to transition to open and interoperable healthcare data infrastructure to comply with the most recent regulations.

Source: Frost & Sullivan

# Validic

## FROST RADAR™ LOCATION

- Validic offers data connectivity solutions for medical device companies, HIT vendors, and health systems. It is ranked among the top 10 companies on the Frost Radar™ and has scored higher on the innovation index than the growth index.
- The company's data interoperability standards are advanced, open, and based on API.
- It is famous for its data standardization process that harmonizes disparate data and makes it portable.

## INNOVATION

- Validic allows rules configuration at scale through API to help customers customize their engagement based on their incumbent and impending value-based care objectives.
- The company demonstrates its interoperability capabilities to an entire ecosystem of leading HIT vendors, medical device companies, EMRs, PHMs, and other third-party platforms that are democratizing patient information to enable data-driven decision making.

## GROWTH

- The company's growth is driven by its key offerings, Validic Inform and Validic Impact; the former connects third-party systems to a proprietary data streaming platform and the latter provides remote patient monitoring services by integrating patients' wearable devices and mHealth tools into health systems' existing clinical workflows.
- As it continues to work with patients, payers, and providers (in real time and at scale) to personalize intervention and change care plans/premiums/lifestyle at a population level, it will be able to boost its growth.

## NEXT STEPS

- Validic is changing the way medical data moves across the US care continuum (hospital to home) through its ability to demonstrate proven interoperability across major health systems.
- The implementation of interoperability mandates under the 21st Century Cures Act and the subsequent demand for data connectivity solutions will further accelerate the company's growth.

Source: Frost & Sullivan



# Strategic Insights



# Strategic Insights

1

The ability to achieve medical device connectivity across the care continuum is critical. In addition, the real-time integration of accurate patient-generated data from connected apps and systems into a central command center platform that uses cognitive algorithms to automate care coordination and personalize intervention will act as a key competitive advantage.

2

The safety and the security of connected care platforms must be a priority. Compliance with interoperability and cybersecurity guidelines must be ensured. Patients and physicians must mutually decide how patient data should be stored, utilized, and exchanged across the care continuum.

3

Innovative capabilities that incorporate the progressive technical connectivity features of health systems and the ability to experiment with AI, blockchain, and precision medicine should be prioritized as they require multi-disciplinary integration at a healthcare ecosystem level.

Source: Frost & Sullivan



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

# Significance of Being on the Frost Radar™

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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.

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## **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.

Source: Frost & Sullivan

# Frost Radar™ Empowers the CEO's Growth Team

## STRATEGIC IMPERATIVE

- Growth is increasingly difficult to achieve.
- Competitive intensity is high.
- More collaboration, teamwork, and focus are needed.
- The growth environment is complex.

## LEVERAGING THE FROST RADAR™

- 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™.

## NEXT STEPS

- **Growth Pipeline Audit™**
- **Growth Pipeline™ Experience**
- **Growth Pipeline™ Dialogue with Team Frost**

Source: Frost & Sullivan

# Frost Radar™ Empowers Investors

## 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**

Source: Frost & Sullivan

# Frost Radar™ Empowers Customers

## 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**

Source: Frost & Sullivan

# 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.

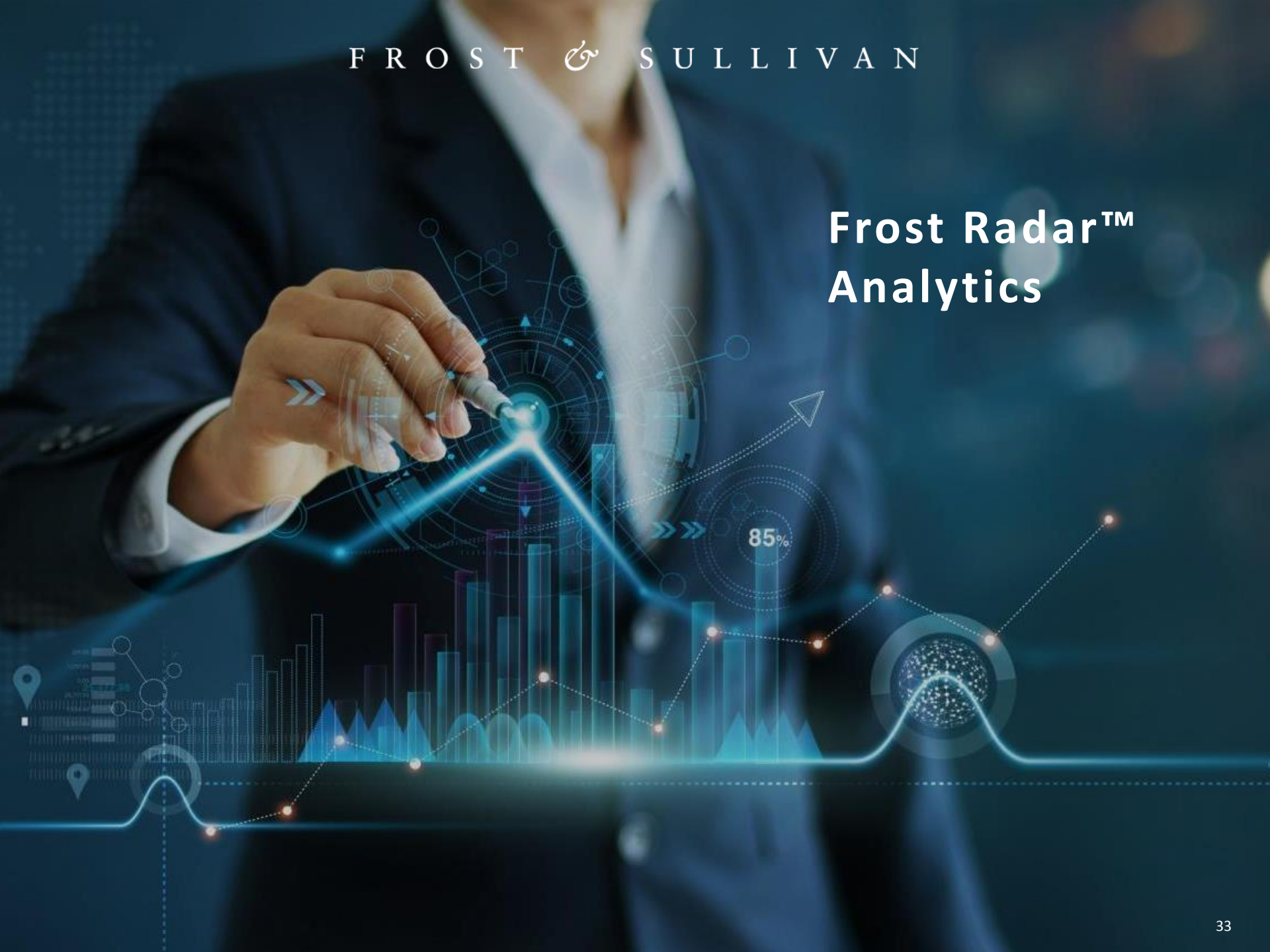
## NEXT STEPS

- **Growth Pipeline Audit™**
- **Join Growth Pipeline as a Service™**

Source: Frost & Sullivan



# Frost Radar™ Analytics



# Frost Radar™: Benchmarking Future Growth Potential

2 Major Indices, 10 Analytical Ingredients, 1 Platform

## VERTICAL AXIS

**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.

## GROWTH INDEX ELEMENTS

- **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.

Source: Frost & Sullivan

# Frost Radar™: Benchmarking Future Growth Potential

2 Major Indices, 10 Analytical Ingredients, 1 Platform

## INNOVATION INDEX ELEMENTS

### HORIZONTAL AXIS

**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.

- **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: 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.

Source: Frost & Sullivan

# Frost Radar™: Benchmarking Future Growth Potential

## Companies to Action

### COMPANIES TO ACTION

All companies on the Frost Radar™ are Companies to Action. **Best Practice** recipients are the companies that Frost & Sullivan considers the companies to act on now.

### GROWTH EXCELLENCE AWARD

The Growth Excellence best practice award is bestowed upon companies achieving high growth in an intensely competitive industry. This includes emerging companies making great strides in market penetration and seasoned incumbents holding on to their perch at the pinnacle of the industry.

### INNOVATION EXCELLENCE AWARD

The Innovation Excellence best practice award is bestowed upon companies that are industry leaders outperforming their competitors in this area or new market entrants contending for leadership through heavy investment in R&D and innovation.

### GROWTH INNOVATION & LEADERSHIP AWARD

The Growth Innovation Leadership (GIL) best practice award is bestowed upon companies that are market leaders at the forefront of innovation. These companies consolidate or grow their leadership position by continuously innovating and creating new products and solutions that serve the evolving needs of the customer base. These companies are also best positioned to expand the market by strategically broadening their product portfolio.

Source: Frost & Sullivan

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