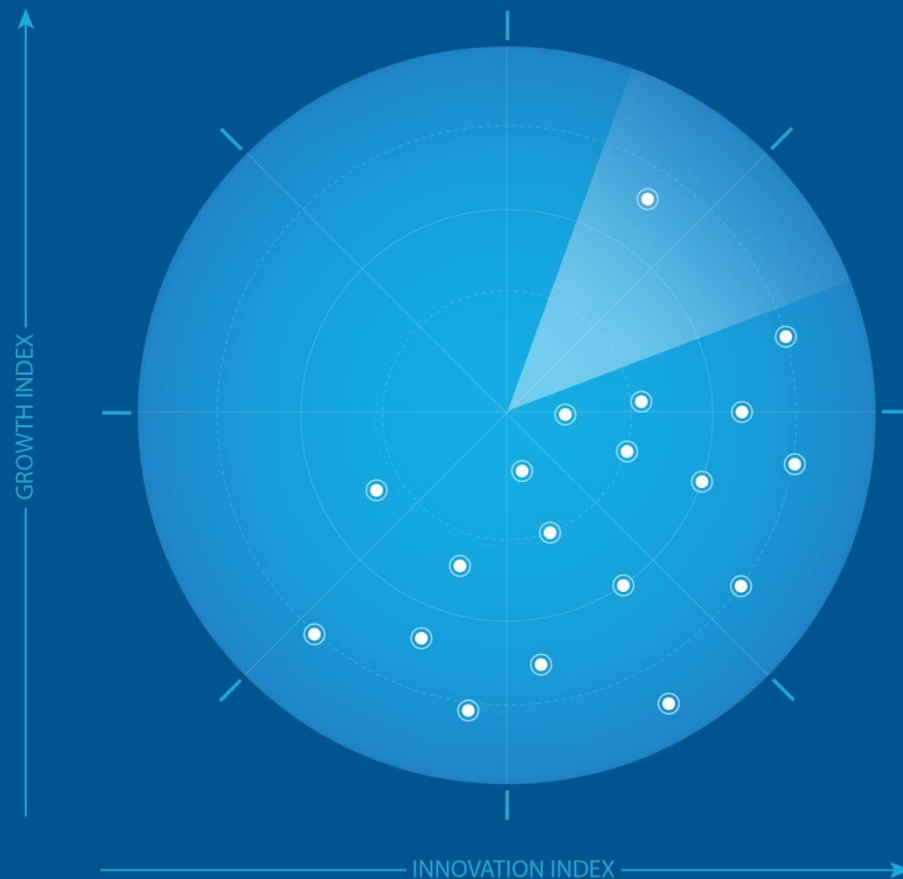# FROST & SULLIVAN

Frost Radar™: Global Enterprise Health Cloud Infrastructure and Platform Services, 2021

A Benchmarking System

Global Transformational Health Research Team at Frost & Sullivan

Strategic Imperative and Growth Environment

Strategic Imperative

- The COVID-19 pandemic has revealed that many healthcare organizations have neither the agility and business continuity programs nor the technologies needed to support them during a crisis. Consequently, some have been forced to act on cloud and digital transformation strategies they had been delaying. The cloud has been critical in helping healthcare providers respond to the pandemic and prepare for future disruptions.

- Cloud service providers have been strengthening their partner programs by reinforcing and increasing collaborations with independent software vendors (ISVs), system integrators (SIs), cloud managed service providers (MSPs), and telecommunications and network service providers. Industry convergence has intensified, with growing demand for edge computing and 5G networks and the need for differentiation throughout the industry.

- Competitive intensity is on the rise with several new companies having launched cloud offerings and forcing market share changes in 2021. This activity will continue to evolve in the next 2 to 3 years, necessitating continual innovation and value-based services from cloud service providers to meet healthcare consumers' various demands.

- Healthcare cloud market participants must create a robust pipeline that accounts for strategic imperatives tied to a pandemic-disrupted world and empowers healthcare organizations with cloud-native digital tools and capabilities, such as secured data compute and storage, data interoperability, and networking.

Source: Frost & Sullivan

Strategic Imperative (continued)

- Cloud providers such as Salesforce, Rackspace Technology, Cisco, and VMware with unique value propositions and differentiated use cases in the areas of personalized care, patient monitoring, health data interoperability, and clinical analytics (AI/ML) will determine market winners.

- In addition, creative packaging with flexible pricing and excellent customer support as well as partnerships with third-party ISVs, SIs, and MSPs will help companies scale and accelerate growth in the highly competitive enterprise health cloud marketplace.

- Cloud communications solutions that are Infrastructure-as-a-Service (IaaS)- and Platform-as-a-Service (PaaS)-based, mobile-ready, pre-packaged, yet API-rich will gain traction among large integrated delivery networks (IDNs) and health systems.

- To scale and accelerate growth, market participants must successfully leverage a robust core feature set and standardized packaging and pricing across healthcare customer segments (large and small clinics and health systems) and multiple countries, while creating differentiated customer value through integrations with important workflows in healthcare organizations.

Key: AI—Artificial Intelligence; ML—Machine Learning.
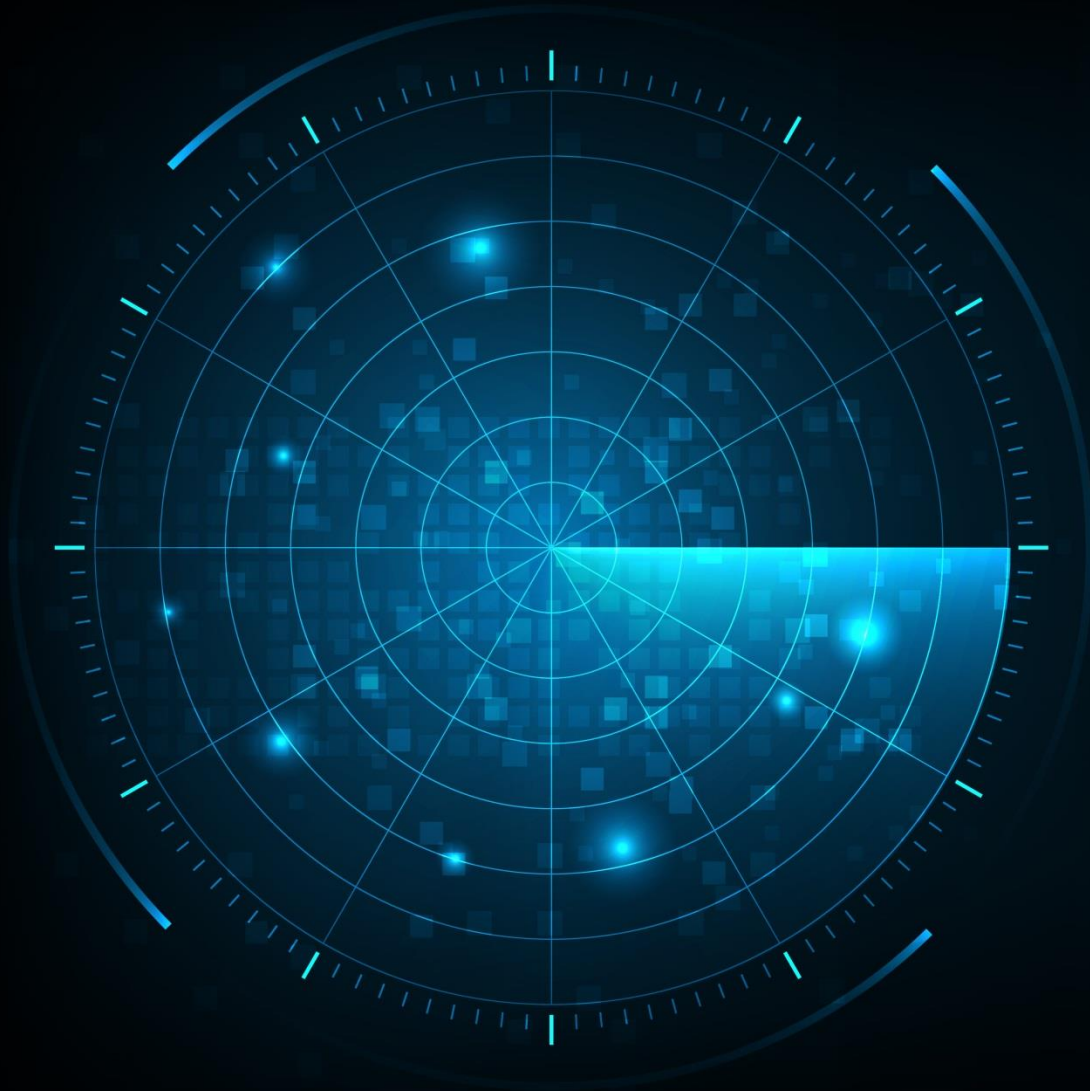Source: Frost & Sullivan

Growth Environment

- The COVID-19 pandemic has accelerated the digitization of healthcare, which has impacted cloud adoption in the most positive way.

- The global healthcare cloud computing market will reach $52.30 billion in revenue by 2026, up from $11.59 billion in 2020 and increasing at a compound annual growth rate (CAGR) of 28.5% during that period.[1] As healthcare organizations continue along their digital transformation journey, market growth will remain strong.

  o Specifically, increased adoption of IaaS cloud services will drive growth, with a market share of 26.0% in 2020, as key market participants expand their market presence in this segment.[2] The increased demand for data interoperability for provider-patient collaboration has accelerated IaaS (computing and storage) adoption to support patient demand for online and digital interactions.

  o PaaS is catching up with IaaS market share as healthcare organizations and digital health start-ups continue their investments in platform strategy for building innovative business models to meet consumer demand for anytime, anywhere healthcare services.

  o IaaS and PaaS market revenue will increase significantly from 2022 to 2026 due to the infrastructure and platforms needed to support remote patient monitoring, virtual care, and patient engagement and collaboration.

Key: [1,2,]Global Healthcare Cloud Growth Opportunities: Competitive Intensity Drives the Growth Potential of Hybrid and Multi-cloud Deployment Models.
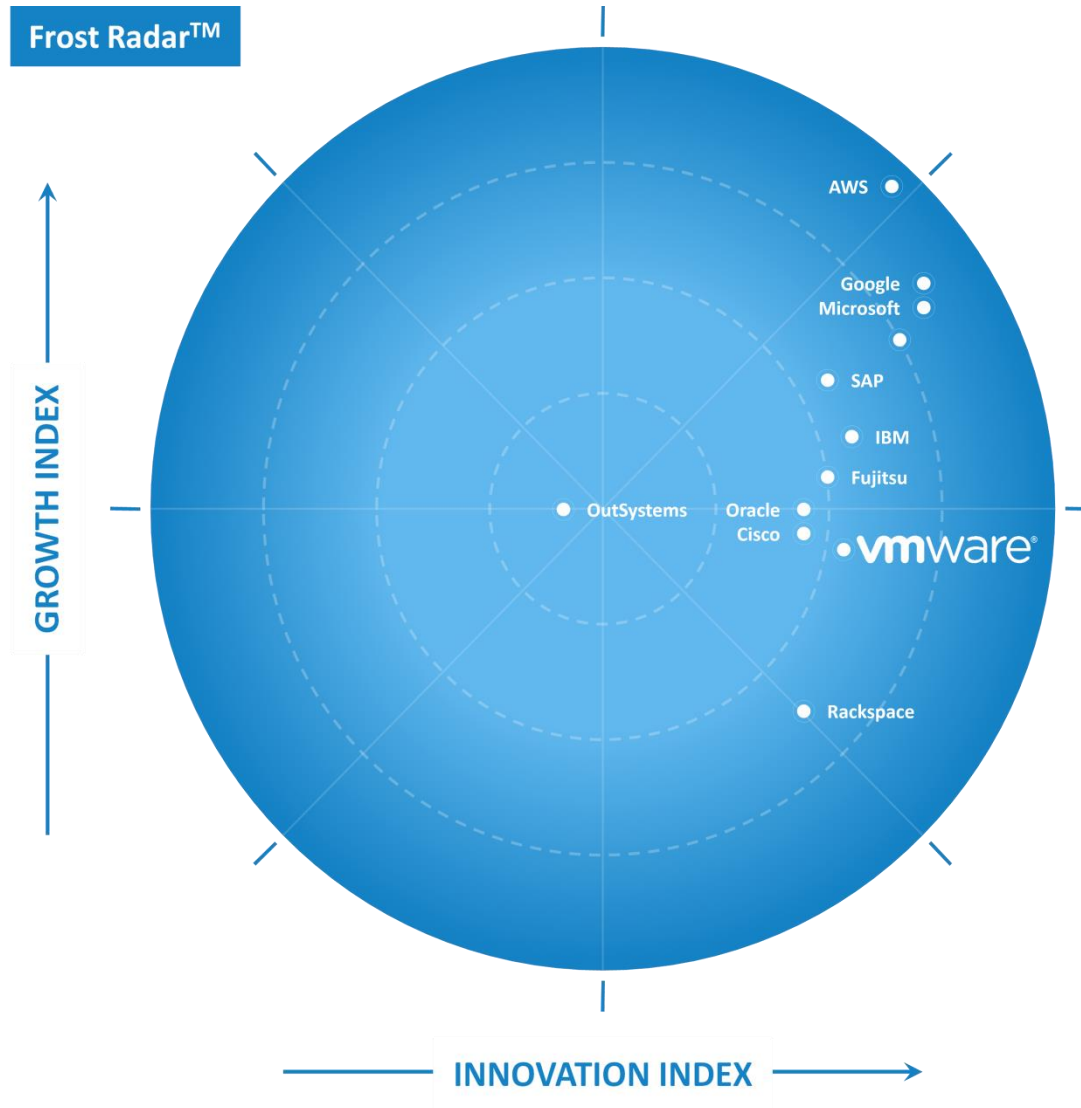Source: Frost & Sullivan

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Enterprise Health Cloud Infrastructure and Platform Services

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Companies to Action

Companies to Be Considered First for Investment, Partnerships, or Benchmarking

VMware

INNOVATION

- VMware has one of the most innovative offerings in the areas of connected care and physician workspace solutions. Its industry digital-first workspace architecture empowers physicians, care teams, and staff to securely access patient health data from any device or any location.

- The company's unique expertise in cloud infrastructure adds a singularly different lens to cybersecurity in healthcare.

- VMware vSphere™ with VMware Tanzu™ helps healthcare providers and payers extend the value of their IT investment workloads and modernize their applications and infrastructure to deliver better health outcomes through connected care.

GROWTH

- VMware delivered nearly $11 billion in revenue in FY 2019, with approximately $2 billion based on its cloud management capabilities and enterprise health cloud products and services.

- During the pandemic, DaaS revenues in the healthcare segment generated through Horizon cloud grew exponentially, a trend that VMware expects to continue in the post-COVID-19 business environment.

- Enterprise health cloud products and offerings and multi-cloud management delivered one of the strongest growth streams in VMware's overall cloud management portfolio.

- VMware is poised for continual growth in its cloud offerings with highlighted case studies in the healthcare segment featuring its innovative solutions in Connected Care, Cybersecurity, Networking, and Physicians' Workspace Management.

FROST PERSPECTIVE

- As VMware integrates its core cloud hybrid and multi-cloud experience and capabilities further in the healthcare providers and payers market, it will become even stronger in the competitive enterprise health cloud market.

- VMware edge devices will start supporting 5G natively to add 5G access to the mix in Q1 of 2022. The company has partnered with AT&T to embed SIM technology in its edge devices, which will help providers and payers deliver connected care, increase provider-patient collaboration, and expand virtual care offerings such as telehealth and remote patient monitoring.

- To expand its enterprise health cloud infrastructure market presence further in Asia-Pacific, strategic partnerships with cloud hyperscalers in the region would increase VMware's reach.

Source: Frost & Sullivan

FROST & SULLIVAN

Strategic Insights

Strategic Insights

1 Strategic partnerships between cloud providers, ISVs, MSPs, and SIs are essential for addressing healthcare customers' varied needs. Some vendors may rely extensively on security and compliance to increase their customer visibility while others rely on advanced analytics and AI/ML tools. In the highly fragmented health cloud market, cloud vendors with differentiated patient-centric cloud solutions across a wide spectrum of use cases tailored to meet consumer demand have emerged as the market leaders.

2 As cloud infrastructure becomes more commoditized, infrastructure and platform service providers have been investing to differentiate themselves through up-stack solutions across a wide spectrum of healthcare use cases, value-added services (e.g., professional and managed cloud services), acquisitions, and industry-specific solutions. Frost & Sullivan finds the inclusion of developers' tools and APIs as the top most-cited criterion among providers and payers when choosing a cloud service provider.

3 Positioning as one of the best cloud vendors in terms of price-performance value is a strategy to consider to attract new users and customers that are shifting among cloud vendors. Price has been a barrier for many organizations when migrating data to the cloud, and it remains a top reason why customers change their cloud provider.

Source: Frost & Sullivan

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Frost Radar™ Analytics

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

GROWTH INDEX ELEMENTS

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.

- **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

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.

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