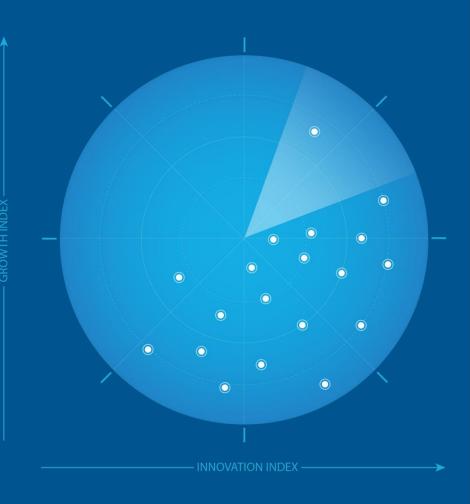
## Frost Radar™: Digital Industrial Platforms, 2022

A Benchmarking System to Spark Companies to Action—Innovation that Fuels New Deal Flow and Growth Pipelines

Global Industrial Automation & Process Control Research Team at Frost & Sullivan



### Introduction

- This Frost Radar<sup>TM</sup> on digital industrial platforms was conceived and built as the competitive benchmark analysis derived from Frost & Sullivan's <u>Global Digital Industrial Platforms Growth</u> <u>Opportunities</u> study published in March 2022.
- Frost & Sullivan defines digital industrial platforms as systems and tech stacks (comprising devices, sensors, actuators, hardware, and/or software) that allow the collection, storage, transformation, contextualization, and integration of data from a diverse set of industrial assets. By leveraging the latest advancements in device management, telecommunications, cloud and edge computing, cybersecurity, data management, analytics, digital twins, open architecture, and no-code/low-code (NC/LC) application frameworks, these platforms help industrial environments to establish and manage effective, trusted, and secure interactions within the digital ecosystem of people, assets, data, operations, processes, and businesses to deliver actionable insights that support business decision-making. The goal is to create intelligent, autonomous, agile, efficient, and sustainable operations.
- This Frost Radar<sup>™</sup> features what Frost & Sullivan considers to be the top 33 companies in the digital industrial platform ecosystem in 2022 in terms of
  - growth trajectory over the past four years,
  - growth potential,
  - market presence and influence, and
  - the ability to innovate and disrupt the market.

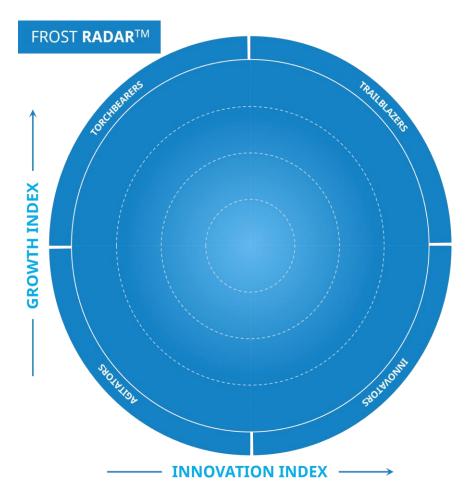
### Introduction (continued)

- Each industry has a unique history, current state, dynamics, and competitive structure; the companies that operate in it face particular challenges and have distinct opportunities to remain relevant or further separate from the pack. While Frost Radar™ deliverables have a standard format, the content itself reflects these singular characteristics and demonstrates why Frost & Sullivan is the leader in determining and providing strategic solutions for how to improve the growth and innovation focus of the participants. This dynamic solution offers frequent rating and positioning of those companies that are agitating, disrupting, or revolutionizing the industry landscape.
- This Frost Radar<sup>TM</sup> is not intended to be just the top players' digital industrial platform offerings for comparison and benchmarking or merely an evaluation of the technical and technological features, capabilities, and specifications of such platforms; what this study offers is a comprehensive performance analysis and assessment of the top companies in terms of their growth strategies, innovation focus, product portfolio, customer alignment, Mega Trends leverage, and other categories.
- Based on Frost & Sullivan's proprietary research methodology and algorithm, the robust Frost Radar<sup>TM</sup> analytical platform calculated and assigned a Growth Index (GI, X-axis) and an Innovation Index (II, Y-axis) score ranging from 1 to 5 to each company based on the analysis of 10 criteria (refer to the <a href="Frost Radar<sup>TM"</sup> Analytics">Frost Radar<sup>TM</sup> Analytics</a> section of this report for further details). The intersection of both scores determined each company's position on the Frost Radar<sup>TM</sup>.

### Introduction (continued)

The Frost Radar<sup>™</sup> is divided into four areas categorizing the market players according to their position.

- Trailblazers: The best overall performers.
   They have an outstanding combined performance in both business growth and innovation strategy.
- Innovators: These companies have excelled in their innovation strategy; they are (and have the potential to continue to be) true industry disruptors.
- Torchbearers: The fast-growing companies.
   Their growth pace and strategies are role models for the industry.
- Agitators: Although strong competitors, these companies have room for improvement in terms of growth and innovation strategies.





### Strategic Imperative

In the early 2010s, the 4th Industrial Revolution (commonly known as 4IR or Industry 4.0) created a new era for manufacturing, automation, and supply chain processes, with digital transformation and the Industrial Internet of Things (IIoT) as its main drivers. Since then, companies across the industrial realm have been experiencing significant challenges, reshaping their businesses and operations to stay competitive and adapt to this new paradigm.

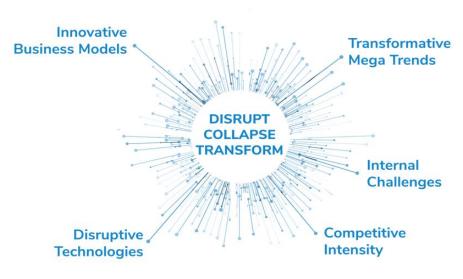
- The exponential adoption of disruptive technological advancements such as artificial intelligence (AI), machine learning (ML), Big Data management, advanced analytics, cloud/edge computing, digital twins, virtual/ augmented/mixed reality (VR/AR/MR), and intelligent sensors, among others, has made possible the transition from automation to digitalization, opening the door for a data-driven industry.
- The 4IR has also brought continuous momentum for industrial initiatives such as the use of open communication
  protocols and standards capable of handling and processing the enormous amount of data generated by IIoT
  devices, the achievement of systems interoperability among process automation technologies, the need for a
  convergence between information and operational technologies (IT and OT), and the development of
  applications in an LC/NC environment.
- The exposure of OT networks and legacy equipment to IT-oriented cloud/edge environments and the adoption of cellular and wireless communication technologies (LTE, 5G, Wi-Fi) on the factory floor have increased the cyberattack surface. In response to this threat, cybersecurity has become an industry imperative.

As one of the major technological breakthroughs derived from 4IR, **Digital Industrial Platforms** were conceived to embrace and fully exploit those technologies in order to address those challenges.

### Strategic Imperative (continued)

Digital industrial platforms have created a market dynamic defined by forces that are transforming the industrial space.

- Disruptive Technologies enable a new shop floor infrastructure and communications paradigm, paving the way
  for data-driven businesses where actionable insights lead to optimum productivity, efficiency, quality, safety,
  reliability, and profitability.
- Innovative Business Models are based on two main premises: XaaSification and servitization, where end users pay only for what they consume on a subscription basis. These models allow for more predictable revenue streams, faster returns on investment (RoI), and enhanced customer satisfaction.
- Transformative Mega Trends force the industrial space to focus on sustainability and net zero initiatives as well as continue the technological evolution from automation to autonomous operations.
- Competitive Intensity as a result of a highly fragmented landscape where traditional industrial automation vendors coexist with hyperscalers, IT companies, and disruptive tech start-ups, leading to mergers and acquisitions (M&A) or strategic partnerships, forming a revolutionary "coopetition" ecosystem.
- Internal Challenges where organizations must face and address critical issues such as talent shortages, remote operations, and resistance to adopting new technologies and ways of working.



### Strategic Imperative (continued)

From a technology perspective, Frost & Sullivan sees the digital industrial platforms entering a third evolutionary stage characterized by

- a switch in focus and core features from "connectivity of things" (stage 1) and data operations (stage 2) to industrial analytics,
- · hyperscalers' increasing involvement in manufacturing,
- · scalability to production levels, and
- development of sustainability-driven apps.

### **Growth Environment**

Digital industrial platforms market revenue stood at \$5.8 billion in 2021. Frost & Sullivan anticipates \$14.21 billion in annual revenue by 2026, with a compound annual growth rate (CAGR) of 19.6% from 2021 to 2026. The market is in the growth phase despite some perplexity and reluctance among business leaders due to challenges related to data security, deployment complexity, and high implementation costs. The continuous development of cloud/edge computing, Big Data, AI, robotics, digital twins, AR/VR/MR, cybersecurity, communication protocols (including 5G, Wi-Fi 6, Wi-Fi HaLow, TSN, MQTT, and OPC UA), and intelligent sensors will continue to drive market growth.

Among the most relevant non-technological growth enablers are M&A and partnerships, new practices propelled by the COVID-19 pandemic such as remote work and remote operations, the growing need for centralized asset monitoring and predictive maintenance, macroeconomic factors such as commodity price fluctuations and higher demand in the oil and gas industry, and the sustainability Mega Trend that focuses on carbon footprint reduction, net zero initiatives, and the circular economy.

Frost & Sullivan's research on digital industrial platforms revealed the following:

- North America is the largest market because of its vast manufacturing installed base, the presence of numerous platform companies, its modern and robust communications infrastructure, and a high degree of technological development.
- Asia-Pacific (APAC) is the fastest-growing market because of the emergence of several platform start-ups with a substantial adoption rate from manufacturing and industrial companies.
- Process industries is the highest-growth segment.
- Edge-based device management is the highest-growth platform type.

### FROST & SULLIVAN

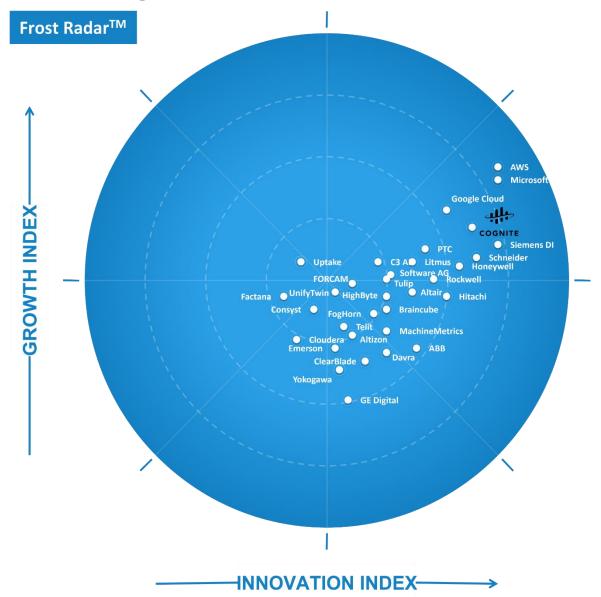


Frost Radar™

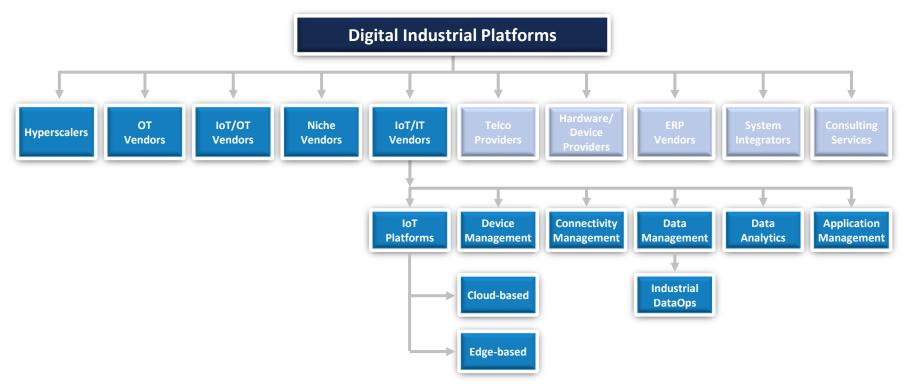
Digital Industrial

Platforms

### Frost Radar™: Digital Industrial Platforms



### Frost Radar™: Competitive Environment



- Hyperscalers provide the cloud resources and services to build industrial platforms.
- **OT Vendors** include traditional industrial automation and industrial software companies. They have plant floor expertise and OT domain knowledge.
- IoT/OT Vendors are IoT-native companies with a robust OT background.
- Niche Vendors are IT-native companies with specific industrial domain expertise (serving specific OT use cases).
- IoT/IT Vendors include agile and dynamic start-ups, disrupters, and IoT natives. They are strong in one or more platform capabilities.

- In a highly fragmented and heterogeneous market with a universe of more than 600 players ranging from hyperscalers and OT vendors to IoT/IT companies, a subset comprising the 65 major market participants in terms of revenue and market share (sliced by player category and platform type) were invited to participate in a briefing session as part of the research scope of the Global Digital Industrial Platforms Growth Opportunities study. According to Frost & Sullivan's definition of digital industrial platforms, this research service considered only those companies with any of the following subscription-based XaaS offerings:
  - Infrastructure as a service (laaS)
  - Platform as a service (PaaS)
  - laaS + PaaS
  - PaaS + Software as a service (SaaS)\*
- While many companies shared meaningful qualitative and quantitative insights and data, others either did not respond, chose not to participate, or would not provide any data to substantiate growth strategy, revenue, or innovation strategy in the global market.
- After a comprehensive analysis of their performance focused on this report's 10 analytical criteria,
   Frost & Sullivan independently plotted 33 of the most significant companies in 2022 in this Frost Radar<sup>TM</sup> analysis, earning the status of market powerhouses from a growth and innovation strategy perspective.

Key: \*Pure SaaS solutions are not covered. Source: Frost & Sullivan

#### **Featured Companies on the Frost Radar™ for Digital Industrial Platforms**

| Company         | Offering                 | Company<br>Domain | XaaS Type | Tier* | Public or<br>Private | Frost Radar™<br>Category |
|-----------------|--------------------------|-------------------|-----------|-------|----------------------|--------------------------|
| ABB             | Ability                  | ОТ                | PaaS/SaaS | 1     | Public               | Innovator                |
| Altair          | SmartWorks IoT           | IoT/OT            | PaaS/SaaS | 2     | Public               | Innovator                |
| Altizon Systems | Datonis                  | IoT/OT            | PaaS/SaaS | 3     | Private              | Innovator                |
| Amazon          | AWS                      | Hyperscaler       | laaS/PaaS | 1     | Public               | Trailblazer              |
| Braincube       | Smart IIoT Platform      | IoT/OT            | PaaS/SaaS | 3     | Private              | Innovator                |
| C3 AI           | C3 AI Suite              | IoT/IT            | PaaS/SaaS | 2     | Public               | Trailblazer              |
| ClearBlade      | ClearBlade Edge Platform | IoT/IT            | PaaS/SaaS | 3     | Private              | Innovator                |
| Cloudera        | Cloudera Data Platform   | IoT/IT            | PaaS/SaaS | 2     | Private              | Agitator                 |
| Cognite         | Data Fusion              | IoT/IT            | PaaS/SaaS | 3     | Private              | Trailblazer              |
| Consyst         | IIoTNext Platform        | IoT/OT            | PaaS/SaaS | 3     | Private              | Agitator                 |
| Davra           | Davra IoT Platform       | IoT/IT            | PaaS/SaaS | 3     | Private              | Innovator                |

Key: \*Tier 1: FY 2021 Platforms BU Revenue >\$1 B | Tier2: FY 2021 Platforms BU Revenue = \$100 M-\$1 B | Tier 3: FY 2021 Platforms BU Revenue < \$100 M.

#### Featured Companies on the Frost Radar<sup>™</sup> for Digital Industrial Platforms

| Company           | Offering              | Company<br>Domain | XaaS Type | Tier | Public or<br>Private | Frost Radar <sup>™</sup><br>Category |
|-------------------|-----------------------|-------------------|-----------|------|----------------------|--------------------------------------|
| Emerson           | Plantweb Optics       | ОТ                | PaaS/SaaS | 1    | Public               | Innovator                            |
| Factana           | Fogwing               | IoT/IT            | PaaS/SaaS | 3    | Private              | Agitator                             |
| FogHorn           | Lightning Edge AI     | IoT/IT            | PaaS/SaaS | 3    | Public*              | Innovator                            |
| FORCAM            | FORCE IIoT            | IoT/IT            | PaaS/SaaS | 3    | Private              | Innovator                            |
| GE Digital        | Predix                | ОТ                | PaaS/SaaS | 2    | Public               | Innovator                            |
| Google            | Google Cloud Platform | Hyperscaler       | laaS/PaaS | 1    | Public               | Trailblazer                          |
| HighByte          | Intelligence Hub      | IoT/IT            | PaaS/SaaS | 3    | Private              | Innovator                            |
| Hitachi           | Lumada                | IoT/OT            | PaaS/SaaS | 1    | Public               | Innovator                            |
| Honeywell         | Forge                 | ОТ                | PaaS/SaaS | 1    | Public               | Trailblazer                          |
| Litmus Automation | Litmus Edge           | IoT/OT            | PaaS/SaaS | 3    | Private              | Trailblazer                          |
| MachineMetrics    | MachineMetrics IIoT   | IoT/IT            | PaaS/SaaS | 3    | Private              | Innovator                            |

Key: \*FogHorn, originally a privately held company, was acquired by public company Johnson Controls in January 2022.

#### **Featured Companies on the Frost Radar™ for Digital Industrial Platforms**

| Company             | Offering                        | Company<br>Domain | XaaS Type | Tier | Public or<br>Private | Frost Radar <sup>™</sup><br>Category |
|---------------------|---------------------------------|-------------------|-----------|------|----------------------|--------------------------------------|
| Microsoft           | Microsoft Azure                 | Hyperscaler       | laaS/PaaS | 1    | Public               | Trailblazer                          |
| PTC                 | ThingWorx                       | ОТ                | PaaS/SaaS | 2    | Public               | Trailblazer                          |
| Rockwell Automation | Innovation Suite                | ОТ                | PaaS/SaaS | 1    | Public               | Innovator                            |
| Schneider Electric  | EcoStruxure                     | ОТ                | PaaS/SaaS | 1    | Public               | Trailblazer                          |
| Siemens DI Software | MindSphere                      | ОТ                | PaaS/SaaS | 1    | Public               | Trailblazer                          |
| Software AG         | Cumulocity IoT                  | IoT/IT            | PaaS/SaaS | 2    | Public               | Trailblazer                          |
| Telit               | deviceWISE                      | IoT/IT            | PaaS/SaaS | 3    | Private              | Innovator                            |
| Tulip               | Tulip Platform                  | IoT/IT            | PaaS/SaaS | 3    | Private              | Innovator                            |
| UnifyTwin           | Intelligent Industrial<br>Suite | IoT/IT            | PaaS/SaaS | 3    | Private              | Innovator                            |
| Uptake              | Fusion                          | IoT/OT            | PaaS/SaaS | 2    | Private              | Torchbearer                          |
| Yokogawa            | Yokogawa Cloud                  | ОТ                | PaaS/SaaS | 1    | Public               | Innovator                            |

Competition in this market is aggressive. Consequently, most significant players have developed noteworthy innovation capabilities and performed quite well on innovation overall, showing scores between 3.0 and 4.5 (out of 5), thus clustering in the Innovators area. Six of them, however, stand out as role models in **Innovation**, with a score above 4.55: **Amazon Web Services (AWS)**, **Microsoft**, **Siemens Digital Industries Software**, **Schneider Electric**, **Cognite**, and **Honeywell**. Companies leading in innovation have

- implemented a world-class innovation process with a direct impact on the growth of their customer base and revenue across core, adjacent, and greenfield markets;
- resource assignation to research and development (R&D) departments (R&D expenses/revenues ratio) way above the industry average;
- demonstrated a relentless focus on maintaining overall product leadership by leveraging their huge solution offerings to maximize revenue across the entire market;
- proactively leveraged Mega Trends to develop new technologies, revenue streams, and business models, being renowned for a visionary, long-term strategic outlook;
- · demonstrated superior customer service and customer satisfaction strategies; and
- applied the latest technological advancements into their solution portfolio, with a particular focus
  on many of the latest industrial trends such as openness and interoperability.

The Frost Radar™ measures growth rates from the last four years in addition to absolute revenue and market share (sliced by player category and platform type) and combines them with <u>several other</u> <u>factors</u> to measure companies' performance along the Growth Axis.

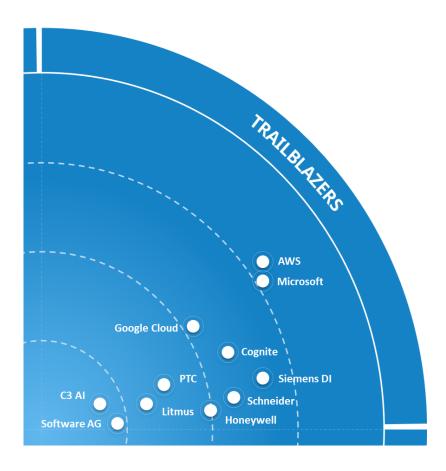
While most companies performed relatively well on **Growth** overall, 11 excelled with scores greater than 3.0 (out of 5): **AWS, Microsoft, Google Cloud Platform (GCP), Cognite, Schneider Electric, Siemens Digital Industries Software, PTC, C3 AI, Litmus Automation, Honeywell, and Software AG. Companies leading in growth have** 

- demonstrated leading year-over-year (YoY) growth rates in their platform solutions business during the previous four years, measured in CAGR;
- either been affected by the COVID-19 pandemic but quickly rebounded or suffered no negative effects, even accelerating and expanding their growth rates;
- early and successfully penetrated consolidated and well-established verticals, such as process, discrete, and hybrid industries;
- developed a customized value proposition for fast-growing segments (e.g., iFactory, connected assets, smart manufacturing, remote operations, and worker safety);
- demonstrated customer acquisition rates higher than the industry average;
- benefited from a large market share in several segments;
- enjoyed strategic M&A and partnerships over the past 18 years that contributed to increasing their market share and domain expertise and, in some cases, boosted their market capitalization (Cognite, for instance, has reached unicorn status [a start-up whose value is greater than \$1 billion] in just five years of existence;
- leveraged a robust growth pipeline system with strong investment in emerging markets; and
- become a benchmark in the industry for their dynamic vision, strategy, and execution excellence, demonstrating an ability to continually scale their businesses and diversify their offerings.

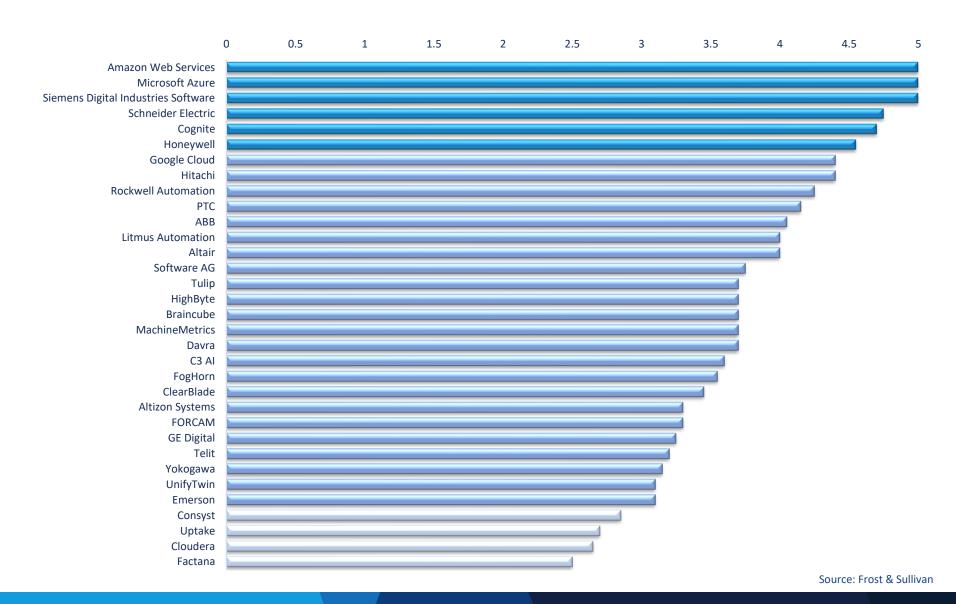
These companies emerged as overall Frost Radar<sup>™</sup>
Trailblazers in 2022 with high growth rates and a focus on industry innovation and disruption: AWS,
Microsoft, Siemens Digital Industries Software,
Cognite, Google, Schneider Electric, Honeywell, PTC,
Litmus Automation, C3.AI, and Software AG.
Hyperscalers

**Cognite** is a privately held company reaching the status of Trailblazer in the Frost Radar<sup>TM</sup>. In just six years of existence, Cognite has reached unicorn status because of its outstanding

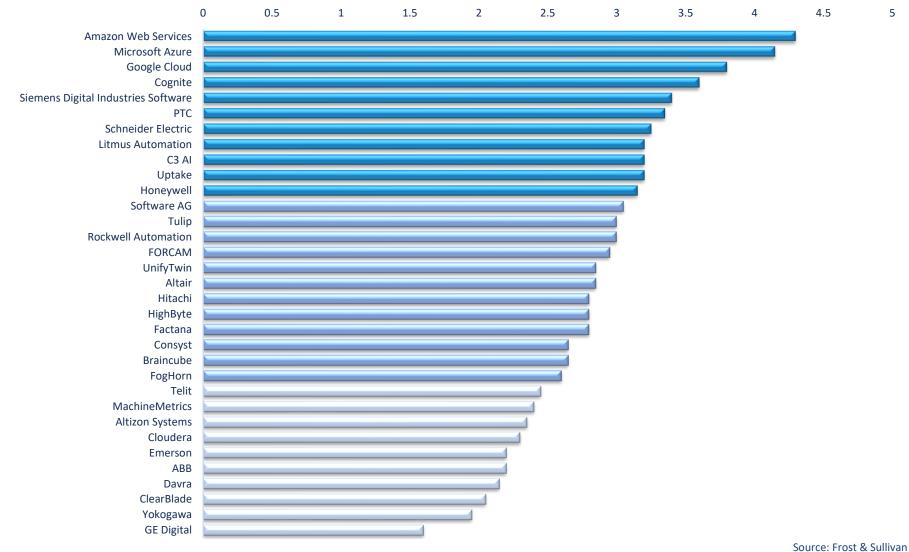
growth and innovation strategies, which included several successful funding rounds and the participation of Saudi Aramco, the largest energy company worldwide, as a shareholder. Its Data Fusion industrial DataOps platform offers the finest data contextualization and data templatization services in the industry and is the ultimate expression of the latest applied science and technology trends in the industry.



### Frost Radar™ Innovation Index Ratings



### Frost Radar™ Growth Index Ratings





& SULLIVAN F R O S T **Trailblazers** 

### Cognite

#### INNOVATION

- Founded in 2016 and headquartered in Norway, Cognite quickly established itself as a market-disrupting DataOps and AI software company focused on heavy-asset industries.
- Cognite Data Fusion (CDF) is an open, LC, and cloud-based DataOps platform that has made a huge impact in the industry through an innovative use of data science, ML, deep learning, neural networks, 3D-rendered visualization, a unified industrial knowledge graph, and state-of-the-art data contextualization and templatization services.
- Cognite continually invests in fundamental technologies that enable the capabilities and features that customers need. The company invests in leadership geared toward product managers and designers, training them to understand the value of design and to evaluate ideas efficiently as they come down the creativity pipeline.

#### **GROWTH**

- Since its inception, Cognite has experienced a stellar growth journey, shown by an outstanding 56.0% CAGR in revenue for the 2018-2021 period and reaching a market capitalization of \$1.6 billion (earning unicorn status) after raising \$338.2 million over four funding rounds.
- Another example of Cognite's vertiginous growth has been its close business relationship with Saudi Aramco (the largest energy company worldwide), which acquired a 7.4% stake in Cognite. The companies recently launched CNTXT, a joint venture based in Saudi Arabia to support industrial digitalization in the Middle East and North Africa region.
- Customer acquisition and retention are metrics in which Cognite excelled in FY 2021, doubling its customer base and showing 93% in gross retention and 121% in net retention.

#### **FROST PERSPECTIVE**

- From a technical perspective, besides its portfolio of proprietary applications,
   CDF supports the integration of open, third-party applications. At the same time,
   Cognite remains agnostic, fully supportive, and open to connecting to any third-party
   LC framework.
- Cognite's staff has at least 10 Olympiad medalists in International Informatics, and about 15% of its workforce has earned a Ph.D., exemplifying the team's domain knowledge, talent, skills, and capabilities.
   Few companies in the industrial space can claim such a scientific level of expertise.
- From a market presence standpoint,
   Frost & Sullivan recognizes Cognite's efforts to increase its footprint outside Europe (particularly in APAC and Latin America) and to expand its industry presence into the mining and renewables verticals to enhance its business volume and market share.

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# Strategic Insights

### **Strategic Insights**

Frost & Sullivan has identified three key action areas for companies to focus, invest, and succeed in this highly fragmented, strongly competitive market.

1

**M&A** and Strategic Partnerships: These are essential for establishing leadership, outperforming the competition, and gaining market share. Over the past 18 months, more than 50 significant inorganic growth transactions have taken place among the companies featured in this Frost Radar<sup>TM</sup>:

- Usually, Tier 1 or Tier 2 companies acquire Tier 3 (or even smaller) companies. A Tier 1/2 company's product portfolio and customer base expand along with its domain expertise; typically, it also will increase its market share.
- Either OT or IT Tier N vendors partner with hyperscalers to make use of their robust infrastructure and cloud platform services and capabilities. OT Tier 1 or Tier 2 companies partner with niche companies to gain specific use case domain expertise.

2

**Edge-based Platforms:** One of the fastest-growing platform-related markets, the edge is revolutionizing operations by providing lower latencies, enhanced security, reduced bandwidth, increased speed, scalability, and better data management capabilities. Frost & Sullivan has estimated a CAGR of 33% for the edge analytics market for the 2019-2025 period\* driven by edge computing infrastructure.

3

**Focus on R&D and Sustainability:** R&D investment (achieving above-average R&D expenditures/revenue ratios) is mandatory for leveraging incipient, disruptive, and science-based technologies that constitute the core feature of digital industrial platforms and ultimately are the competitive differentiators. Platforms with industrial data analytics capabilities hosting sustainability-driven apps allow the reduction of energy consumption and greenhouse gas emissions toward the achievement of net zero goals.

Key: \*Growth Opportunities in the Global Edge Analytics Market, Forecast to 2025 (October 2020).



### 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.



### 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<sup>TM</sup>.

#### 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

#### **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.

#### **INNOVATION INDEX ELEMENTS**

#### 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.

### Legal Disclaimer

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