

Digital Engineering Services

Platforms and Applications Services

A research report comparing provider/software vendor strengths, challenges and competitive differentiators

Customized report courtesy of:

HCL

Executive Summary 03

Provider Positioning 06

Introduction

Definition 09

Scope of Report 11

Provider Classifications 12

Appendix

Methodology & Team 21

Author & Editor Biographies 22

About Our Company & Research 24

Platforms and Applications Services 13 – 19

Who Should Read This 14

Quadrant 15

Definition & Eligibility Criteria 16

Observations 17

Provider Profile 19

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Digital services are recasting manufacturing and production sector.

The digital engineering space is witnessing a wide adoption of various technologies, spurred by the digital revolution in the manufacturing industry with its strong potential to drive productivity. Digital technologies that are used by production and manufacturing companies help create a data lake at all phases and stages of the production line, capturing every piece of information that can optimize or improvise the process in every dimension. On the other hand, traditional engineering methodologies are human intensive and offer reserved guidance and insights from the transactional data generated at every point.

Technology plays a crucial role in an open, complex and integrated engineering stream that spans various complex systems and platforms.

The processes, services and customer experience help define sustainability and relevance in the right market. Design and development activities have always been at the inception points of every engineering initiative. The U.S. has always led the way for adoption and innovation, given its large consumer base. Almost every new idea or concept is prototyped in this marketplace. Transformation and innovation are at their peak due to evolving work methods, and business models. As a result, service providers have changed their engineering strategies and adopted, developed and leveraged capabilities to cater to the core manufacturing and product development industries.

Digital services
and engineering
are a **powerful**
combination.



Executive Summary

Mid-sized and big multinational engineering clients have elevated their demands on digital engineering services. This has been the driving force for providers to respond quickly and effectively by restructuring their capabilities in driving technology adoption. As a result, digital engineering transformation services have emerged, including new capabilities to support digital product design in real time and other competencies around data-driven product lifecycle management, intelligent manufacturing operations, and digital customer experience delivery services. The increased adoption is further driven by AI-powered R&D, autonomous testing, simulations, augmented and virtual reality applications, digital twins and predictive machine learning. Intelligent supply chains, Industry 4.0, intelligent connected machines and IoT are some of the critical enablers for engineering services transformation.

Platformization is a major trend in the U.S., leading to new developments. Innovation and research have become favored investment areas to create opportunities. Large engineering service provider companies have now directed their focus toward building non-traditional technical platforms that act as an enterprise service bus to incorporate with and connect to any platform spanning from engineering to user experience. This is driven further by the demand from manufacturers and OEMs for such integrative platforms. Studying user patterns and consumption trends helps product companies intelligently improvise the connected product experience by encompassing complementing services and products through a platform.

Processes and workflow phases have been digitized and automated, especially in discrete and process industries. As

a result, integrated customer and user engagements see drastic changes at an operations level.

The infusion of technology from AI, machine learning and data analytics is improvising and presenting new dimensions to every engineering phase. Furthermore, the adoption of emerging technologies in the manufacturing and production sectors has spiked due to new consumer behaviors, an evolved set of requirements, new consumption mechanisms and educated clientele. As a result, there is constant pressure to re-engineer products that meet current and future market expectations.

Product definition in the engineering and manufacturing industries has changed after the digital revolution. Software products are an essential component of the entire value chain spanning from inception to experience. Almost all heavy manufacturing industries have

started to refine digital products and analyze how end users, consumers and markets leverage products. Engineering service providers are building software by using innovative digital architecture, components and programs to redesign solutions and products. They also leverage methodologies, frameworks and practices from every technology engineering domain.

Furthermore, augmenting human and machine-generated data and advanced analytics tools are fueling the metaverse with futuristic technologies that have a powerful relevance and prominence in the engineering industry, transforming the entire spectrum of products across industries for modern times. Such technologies have helped enhance the skill matrix and engineering competencies, creating avenues for technology skills in the engineering sector.



Executive Summary

The use of emerging technologies has a drastic impact on many vital areas such as decarbonization that require immediate attention. The data points captured and processed through various dimensions at every transaction point provide insights that directly reduce friction, consumption and dissipation of natural resources, leading to optimized operations and high cost savings.

Digital engineering services form the core of manufacturing and production industries.




Provider Positioning

Page 1 of 3


	Design and Development (Product, Services, Experience)	Connected and Intelligent Operations — Discrete Industries	Connected and Intelligent Operations — Process Industries	Integrated Customer/ User Engagement and Experience	Platforms and Applications Services
Accenture	Leader	Leader	Leader	Leader	Leader
Accolite Digital	Product Challenger	Not In	Not In	Product Challenger	Not In
Capgemini	Leader	Leader	Leader	Leader	Leader
Caresoft Global	Not In	Market Challenger	Not In	Not In	Not In
Cognizant	Leader	Leader	Product Challenger	Leader	Leader
Cyient	Market Challenger	Market Challenger	Market Challenger	Market Challenger	Market Challenger
eInfochips	Contender	Contender	Not In	Not In	Contender
EPAM	Market Challenger	Market Challenger	Market Challenger	Market Challenger	Market Challenger
e-Zest	Contender	Contender	Contender	Contender	Contender
GlobalLogic	Leader	Rising Star ★	Not In	Rising Star ★	Leader



 Provider Positioning

	Design and Development (Product, Services, Experience)	Connected and Intelligent Operations — Discrete Industries	Connected and Intelligent Operations — Process Industries	Integrated Customer/ User Engagement and Experience	Platforms and Applications Services
HARMAN Digital Transformation Solutions (DTS)	Product Challenger	Rising Star ★	Product Challenger	Product Challenger	Product Challenger
HCL	Leader	Leader	Leader	Leader	Leader
Hexaware	Leader	Not In	Not In	Not In	Not In
Infostretch	Contender	Contender	Contender	Contender	Contender
Infosys	Leader	Leader	Leader	Leader	Leader
ltransition	Contender	Not In	Not In	Contender	Contender
KPIT	Not In	Market Challenger	Not In	Not In	Not In
LTTS	Leader	Leader	Leader	Leader	Leader
Mindtree	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Product Challenger
Mphasis	Rising Star ★	Product Challenger	Not In	Leader	Rising Star ★



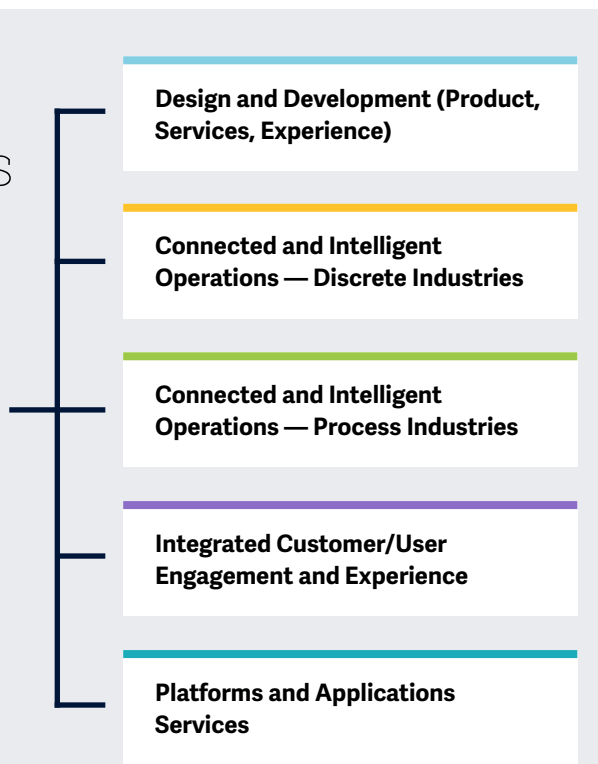
 Provider Positioning

	Design and Development (Product, Services, Experience)	Connected and Intelligent Operations — Discrete Industries	Connected and Intelligent Operations — Process Industries	Integrated Customer/ User Engagement and Experience	Platforms and Applications Services
Persistent Systems	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Product Challenger
Quest Global	Not In	Not In	Market Challenger	Not In	Not In
Tata Elxsi	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Product Challenger
TCS	Leader	Leader	Leader	Not In	Leader
Tech Mahindra	Product Challenger	Leader	Product Challenger	Leader	Product Challenger
UST	Market Challenger	Market Challenger	Market Challenger	Market Challenger	Market Challenger
Virtusa	Product Challenger	Not In	Not In	Product Challenger	Not In
VVDN Technologies	Product Challenger	Not In	Not In	Product Challenger	Contender
Wipro	Leader	Leader	Leader	Leader	Leader
Zensar	Rising Star ★	Product Challenger	Not In	Rising Star ★	Rising Star ★



ISG perceives the Digital Engineering Services study as most critical in 2022.

Simplified Illustration Source: ISG 2022



Definition

Engineering services have undergone significant transformations in the recent past, with paradigm shifts observed in manufacturing and product development across industry spectrums ranging from automotive and aircraft OEMs to health tech and smart infrastructure systems developers. The U.S. is one of the epicenters of large manufacturing e' supply chain and sourcing organizations that have seen a disruption in the process and management areas. With the rapid industrial application of AI, machine learning, predictive analytics, IoT, 5G, intelligent automation and other technologies, foundational engineering services such as product innovation, ideation, strategy and design, R&D and testing services, operations, product life cycle management (PLM) and aftermarket services have become digitized.

Digital engineering service providers in the U.S market are responding quickly and effectively to such demands from mid-sized and large global engineering clients. The market has moved in a synchronized manner toward digital engineering transformation services, providing new capabilities to support digital product design in real-time along with data-driven PLM, flexible intelligent manufacturing operations and digital customer experience delivery services. Key enablers for these engineering services transformations include AI-powered R&D, autonomous testing, simulations, augmented, virtual and mixed reality (AR/VR/MR) applications, digital twins, predictive machine learning applied to manufacturing and intelligent supply chains, Industry 4.0, IoT, advanced driver assistance systems (ADAS), smart connected machines and AIoT (Artificial Intelligence of Things).



Introduction

Changes in engineering services are further accentuated by the COVID-19 pandemic. For example, companies, industries and operations ranging from traditionally slow changing, highly regulated health tech and pharma R&D firms to manufacturing supply chains and distribution networks had to quickly reimagine, redesign and reinvent themselves by leveraging digital capabilities. The ISG Provider Lens™ Digital Engineering Services 2022 study analyzes these evolving trends with a deeper focus on product and service development, followed by connected and intelligent operations across discrete sectors such as automotive, aerospace, medical equipment for continuous and process industries. It also evaluates providers based on their customer experience on value delivery and associated competencies.



Scope of the Report

In this ISG Provider Lens™ study, ISG covers the following five quadrants: Design and Development (products, services, experience)

Connected and Intelligent Operations – Discrete Industries, Connected and Intelligent Operations – Process Industries, Integrated Customer/User Engagement and Experience, and Platforms and Applications Services.

This ISG Provider Lens™ study offers IT-decision makers:

- Transparency on the strengths and weaknesses of relevant providers
- A differentiated positioning of providers by segments
- Focus on regional market

Our study serves as the basis for important decision making in terms of positioning, key relationships and go-to-market considerations. ISG advisors and enterprise clients also use information from these reports to evaluate their existing vendor relationships and potential engagements.

Provider Classifications

The provider position reflects the suitability of IT providers for a defined market segment (quadrant). Without further additions, the position always applies to all company sizes classes and industries. In case the IT service requirements from enterprise customers differ and the spectrum of IT providers operating in the local market is sufficiently wide, a further differentiation of the IT providers by performance is made according to the target group for products and services. In doing so, ISG either

considers the industry requirements or the number of employees, as well as the corporate structures of customers and positions IT providers according to their focus area. As a result, ISG differentiates them, if necessary, into two client target groups that are defined as follows:

- **Midmarket:** Companies with 100 to 4,999 employees or revenues between \$20 million and \$999 million with central headquarters in the respective country, usually privately owned.
- **Large Accounts:** Multinational companies with more than 5,000 employees or revenue above \$1 billion, with activities worldwide and globally distributed decision-making structures.

The ISG Provider Lens™ quadrants are created using an evaluation matrix containing four segments (Leader, Product Challenger, Market Challenger and Contender), and the providers

are positioned accordingly. Each ISG Provider Lens quadrant may include service providers that ISG believes have strong potential to move into the Leader quadrant. This type of provider can be classified as a Rising Star.

Number of providers in each quadrant: ISG rates and positions the most relevant providers according to the scope of the report for each quadrant and limits the maximum of providers per quadrant to 25 (exceptions are possible).



 **Provider Classifications: Quadrant Key**

Product Challengers offer a product and service portfolio that reflect excellent service and technology stacks. These providers and vendors deliver an unmatched broad and deep range of capabilities. They show evidence of investing to enhance their market presence and competitive strengths.

Leaders have a comprehensive product and service offering, a strong market presence and established competitive position. The product portfolios and competitive strategies of Leaders are strongly positioned to win business in the markets covered by the study. The Leaders also represent innovative strength and competitive stability.

Contenders offer services and products meeting the evaluation criteria that qualifies them to be included in the IPL quadrant. These promising service providers or vendors show evidence of rapidly investing in products/services and a follow sensible market approach with a goal of becoming a Product or Market Challenger within 12 to 18 months.

Market Challengers have a strong presence in the market and offer a significant edge over other vendors and providers based on competitive strength. Often, Market Challengers are the established and well-known vendors in the regions or vertical markets covered in the study.

★ **Rising Stars** have promising portfolios or the market experience to become a Leader, including the required roadmap and adequate focus on key market trends and customer requirements. Rising Stars also have excellent management and understanding of the local market in the studied region. These vendors and service providers give evidence of significant progress toward their goals in the last 12 months. ISG expects Rising Stars to reach the Leader quadrant within the next 12 to 24 months if they continue their delivery of above-average market impact and strength of innovation.

Not in means the service provider or vendor was not included in this quadrant. Among the possible reasons for this designation: ISG could not obtain enough information to position the company; the company does not provide the relevant service or solution as defined for each quadrant of a study; or the company did not meet the eligibility criteria for the study quadrant. Omission from the quadrant does not imply that the service provider or vendor does not offer or plan to offer this service or solution.





Platforms and Applications Services

Who Should Read This

The report is relevant for U.S.-based enterprises evaluating providers offering platform and application services to design and deliver platform engineering competencies.

In this quadrant, ISG assesses the current market positioning of providers with proficiencies in business and technical design, capabilities in building new experiences, prowess to leverage digital ecosystems and orchestration platforms and the ability to use microservice-based architectures.

Platformization has become an integral part of digital product design and development irrespective of the industry vertical. Everything becoming software dependent requires softwarization of product features and product

functionalities. Differentiation by software functions is a refreshing approach to product development alongside the adoption of advanced technologies and involvement of the ecosystem in which the product would thrive.

Service providers should invest in development and testing environments from on-premises to the cloud, distributed product engineering, and mature DevOps and agile practices. Providers should consider accelerating product digitalization, including software-defined products, defining new architectures for intelligent edge/smart devices with better connectivity enablement and enrichment.



Engineering leaders should read this report to better understand the relative strengths and weaknesses of digital engineering service providers offering platform and application services portfolios that can help lead the digital journeys of engineering practices.



Manufacturing leaders should read this report to develop a better understanding of the current landscape of digital engineering service providers in the U.S.

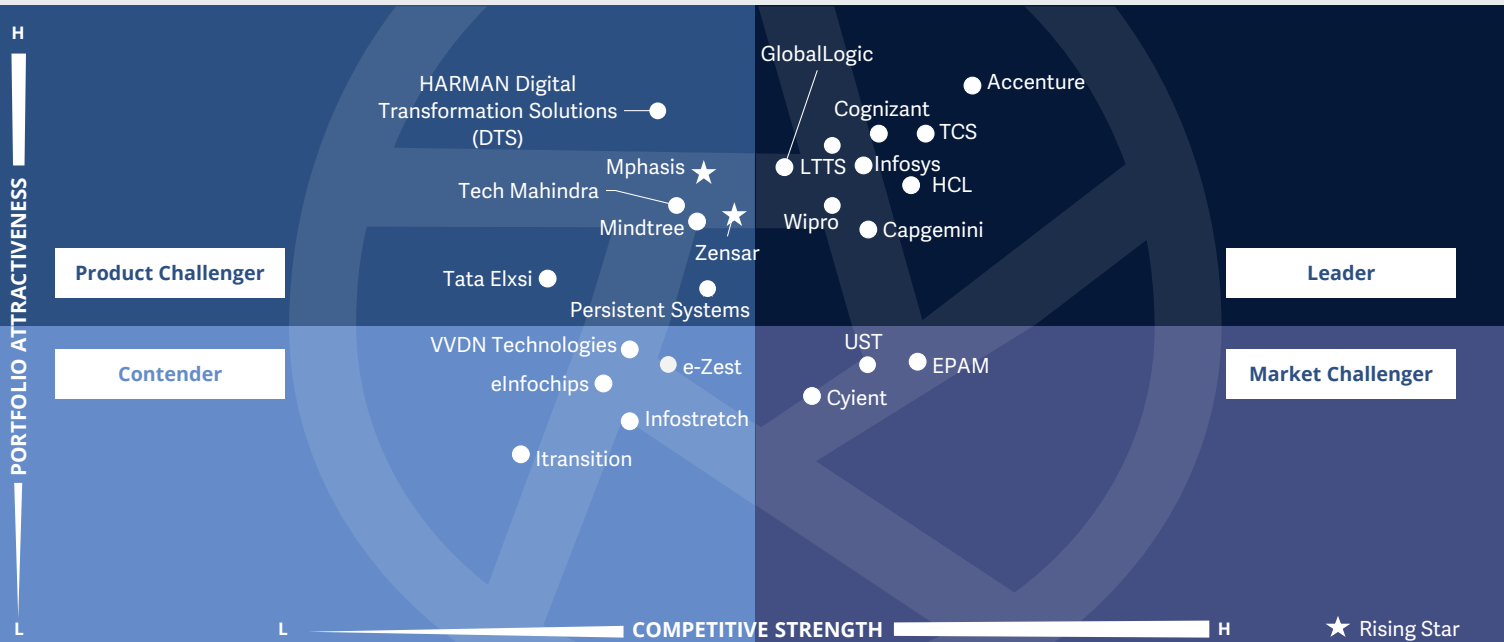


Software development and technology leaders should read this report to understand the positioning of digital engineering service providers and how their offerings can impact an enterprise's transformation initiatives, while identifying the benefits of embracing a digital journey in the engineering space.



Digital Engineering Services
Platforms and Applications Services

U.S. 2022



Expertise in technical design is essential for **building digital ecosystems, orchestration platforms** and microservice-based architectures. This quadrant assesses providers' competencies in **design and delivery capabilities** across digital platform engineering.

Tapati Bandopadhyay



Definition

This quadrant covers a service provider's ability to design and deliver digital platform engineering competencies. The key capabilities include proficiencies in business and technical design, building new experiences, and the ability to leverage digital ecosystems, orchestration platforms and microservice-based architectures. This analysis also covers containerization, connected intelligence and experience management across products, services and user experience (UX) in real time.

Eligibility Criteria

1. Digital ecosystem orchestration platform capabilities: ability to design, build, deliver, support and leverage digital ecosystem orchestration platforms to facilitate commerce and monetize products and services.
 2. Technology platforms engineering: building and operating a common platform as a product for technology teams to reduce time to market and complexity by providing self-service deployments. Capabilities and proven experience: utilizing integrated digital technology platforms of connected systems, things and people, and de-link hardware and software
 3. Core platform strategy and engineering capabilities: shift from a product to a platform mentality by architecting and developing an API strategy for a scalable and future-ready platform
 4. Cloud-native design skills: Cloud-based digital platform ecosystem offerings and services at speed, building and offering flexible new experiences by combining next-generation networks, 5G and edge analytics, and federated AI on real-time streaming data. Augmented, virtual and mixed reality, plus real and virtual application capabilities from integrated digital cloud
 5. Product/service configurability and personalization: apply behavioral intelligence and predictive analytics on real-time/streaming data from users and smart connected devices
 6. Design, build, deliver, run and augment reusable functions/modules in digital platforms
- platforms. Engineering ADM competency: application development and maintenance (ADM) ability with a focus on smart, connected product, platform and service design, and cloud-native, digital-native design



Observations

Service providers and clients are simultaneously developing the platform as they understand the value of monetizing products and services. In addition to facilitating transactions, the platform economy has opened new revenue streams for businesses and help orchestrate better customer experiences for individuals and businesses. Providers that offer platform engineering services assist enterprises in obtaining significant ROI in developing, operating and maintaining scalable platforms.

Containerization has provided organizations with new opportunities and business challenges. As a result, they are adopting collaborative digitized engineering processes to accelerate platform development, secure the digital and physical worlds, and automate the process across the product development lifecycle and operations as part of the new

normal. Here are three key areas where providers are experiencing the change and shifting focus

- They are creating joint strategies of co-working and co-building solutions by leveraging the industry contextual knowledge, which is increasing as the collaboration of domain knowledge and technology expertise results in new industry aligned solutions.
- Providers are taking ownership to offer support across all stages of the transformation journey, from strategizing, building, migrating and deploying to sustaining and supporting operations.
- Digital engineering service providers are securing leadership as advisory members and in manufacturing and engineering organizations, offering guidance on platform engineering, design, and simulation.

The Leaders and Rising Stars in the platform engineering and application services space have enabled completely new value propositions that can transform even legacy businesses into data and intelligence-enabled composable service architecture and operating models.

From the 41 companies assessed for this study, 24 have qualified for this quadrant with nine being Leaders and one as a Rising Star.

accenture

Accenture has defined the platform engineering services space with digital value enablement across hardware, software, data and services. At the intersection points of these modular technology stacks, the design and imagination agility of the talent pool pivots clients into the digital age.

Capgemini

Capgemini leverages its cross-vertical and region experience, including its knowledge, base to help clients platformize their businesses. The recent focus on ESG is one of its key elements that demonstrate service maturity.

cognizant

Cognizant offers a rapid and outcome-assured path to platformization for clients' digital and hybrid businesses as well as operating models. The focus is on delivering speed and quality across the transformation journey.



Platforms and Applications Services



GlobalLogic's digital engineering services enable clients to accelerate their business transformation predictably and holistically.



HCL's long-term engineering strengths and intellectual property-led innovations help clients platformize their digital and hybrid businesses in a seamless manner. The company leverages reusable knowledge assets and digital accelerators to enable their transformation.



Infosys leverages its talent quality, experience and knowledge along with tools and accelerators to provide platformization opportunities to clients. Platform engineering requires a large-scale infusion of domain consulting skills, an area where Infosys has strong expertise.



LTTS' platform engineering services are focused on enabling disruptive business outcomes for clients across the varied digital maturity spectrum. The company also offers a long-term lifecycle management approach towards digital business platforms and assets for clients.



TCS leverages its strong and deep technology know-how to enable rapid platformization of clients' businesses and value chains. The rapid implementations of platform modules also ensure tried and tested results and efficiencies, while keeping the business governance aspects at the core.



Wipro offers a comprehensive view across platform assets, from technology solutions and domain use case standpoints. The end-to-end lifecycle-based platform asset management approach ensures a sustainable value stream from clients investments in the platform ecosystem.



Rising Star ZenSar's all-out approach to digitalization beyond just digitization (including the application of technology stacks) helps clients transform rapidly. While modularizing client businesses effectively to deliver digital value propositions, the approach ensures governance and data-driven transparency.



HCL



“HCL’s engineering strengths help clients build digital and hybrid businesses.”

Tapati Bandopadhyay

Overview

HCL is headquartered in Noida, India, and operates in 52 countries. It has over 197,000 employees across 215 global offices. In FY22, the company generated \$11.48 billion (+12.8 percent YoY) in revenue, with IT and business services as its largest segment. HCL’s end-to-end platform engineering services help clients get the most out of their engineering investments in high-performance, secure and scalable platforms.

Strengths

Data engineering and analytics

centric proposition: HCL has been witnessing significant traction in the digital engineering space across the U.S., as well as globally, in terms of cloud and digital platform adoption and digital commerce. From the aspect of Industry 4.0, digital engineering and platforms centric approaches have helped transform client businesses even in the traditional manufacturing landscape into highly efficient data driven business, where speed of change and market response are key levers.

Deep domain experience backed by talent pool:

The rapid uptake of digital technology and engineering deployments across domains require a unique talent pool with deep technology and domain depth. HCL drives digital adoption with the support of more than 41,000 engineers with deep domain expertise. Given these capabilities, most clients prefer to work with the company on an end-to-end and long-term basis.

Focus on client outcomes: HCL’s strong differentiation in the platforms and applications service space stems from its focus on clients outcomes such as time to market, time to performance, time to value and time to service.

Caution

As a known leader in the engineering services space across all mature markets, HCL should strengthen its marketing for digital platform engineering. With ample case studies and proof points, the company can pivot its stories on the digital technology stack-based platform ecosystem to those with customer business value.





Appendix

The ISG Provider Lens 2022 – Digital Engineering Services analyzes the relevant software vendors/service providers in the U.S. market, based on a multi-phased research and analysis process, and positions these providers based on the ISG Research methodology.

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The research and analysis presented in this report includes research from the ISG Provider Lens program, ongoing ISG Research programs, interviews with ISG advisors, briefings with services providers and analysis of publicly available market information from multiple sources. The data collected for this report represents information that ISG believes to be current as of May 2022 for providers who actively participated as well as for providers who did not. ISG recognizes that many mergers and acquisitions have taken place since that time, but those changes are not reflected in this report.

All revenue references are in U.S. dollars (\$US) unless noted.

The study was divided into the following steps:

1. Definition of Digital Engineering Services market
2. Use of questionnaire-based surveys of service providers/vendor across all trend topics
3. Interactive discussions with service providers/vendors on capabilities & use cases
4. Leverage ISG's internal databases & advisor knowledge & experience (wherever applicable)
5. Use of Star of Excellence CX-Data
6. Detailed analysis & evaluation of services & service documentation based on the facts & figures received from providers & other sources.
7. Use of the following key evaluation criteria:
 - * Strategy & vision
 - * Tech Innovation
 - * Brand awareness and presence in the market
 - * Sales and partner landscape
 - * Breadth and depth of portfolio of services offered
 - * CX and Recommendation



Author & Editor Biographies



Lead analyst

Tapati Bandopadhyay
Lead analyst – U.S.

Dr. Tapati Bandopadhyay has been an inventor, builder, practitioner and researcher in AI, intelligent automation and related domains, for 25+ years. She has been a global practice leader and executive-level advisor & consultant, in AI-automation-cloud and services management, covering MLOps, AIOps, CloudOps, DataOps, ModelOps &

DevOps metrics-driven practices and data and AI story-building and story-telling practices and tools. As an ISG Lead Analyst on AWS and in AI-ML, consulting & managed services, she is responsible for defining and leading the ISG Provider Lens branded research projects, for the US market.



Senior Research Analyst

Srinivasan PN
Senior Research Analyst

Srinivasan PN is a senior research analyst at ISG and is responsible for supporting and co-authoring ISG Provider Lens™ studies on AWS & Google Ecosystem, Digital Engineering, Manufacturing and Mainframe. His area of expertise lies in the space of engineering services and digital transformation. Srinivasan comes with 8 years of experience in the technology

research industry and in his prior role, he carried out research delivery for both primary and secondary research capabilities. Srinivasan also authors enterprise context reports and global summary reports for each of his expertise areas. Along with this, he supports the advisors with his research skills and writes papers about latest market developments in the industry.





IPL Product Owner

Jan Erik Aase
Partner and Global Head –
ISG Provider Lens

Mr. Aase brings extensive experience in the implementation and research of service integration and management of both IT and business processes. With over 35 years of experience, he is highly skilled at analyzing vendor governance trends and methodologies, identifying inefficiencies in current processes, and advising the industry. Jan Erik has experience on all four

sides of the sourcing and vendor governance lifecycle - as a client, an industry analyst, a service provider and an advisor. Now as a research director, principal analyst and global head of ISG Provider Lens™, he is very well positioned to assess and report on the state of the industry and make recommendations for both enterprises and service provider clients.



*ISG Provider Lens™

The ISG Provider Lens™ Quadrant research series is the only service provider evaluation of its kind to combine empirical, data-driven research and market analysis with the real-world experience and observations of ISG's global advisory team. Enterprises will find a wealth of detailed data and market analysis to help guide their selection of appropriate sourcing partners, while ISG advisors use the reports to validate their own market knowledge and make recommendations to ISG's enterprise clients. The research currently covers providers offering their services across multiple geographies globally.

For more information about ISG Provider Lens research, please visit this [webpage](#).

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MAY 2022

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