Semiconductor Engineering Services PEAK Matrix® Assessment 2024

October 2024: Complimentary Abstract / Table of Contents

PEAK MATRIX®

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Introduction

Semiconductors are the backbone of modern electronics, and their manufacturing involves a highly intricate process. Recent trends highlight significant investments in Engineering and Research Development (ER&D) within the semiconductor sector, fueled by advances such as smaller node sizes, innovative materials, AI-enabled chipsets, custom-designed chips, advanced packaging techniques, and emerging chip architectures. Generative AI is also being harnessed to enhance semiconductor engineering.

However, the industry faces several challenges including the need to adapt to evolving customer demands, expand assembly and testing capacities, and create resilient supply chains that can withstand geopolitical uncertainties and disruptions. Additionally, the growing demand for energy-efficient, high-performance chips tailored for edge computing and automation in sectors such as automotive, industrial, healthcare, and smart cities is driving a transformation in chip architecture and design. This evolution is reshaping the semiconductor landscape, pushing the industry toward greater innovation and adaptability.

Service providers in semiconductor engineering play a crucial role in addressing these needs by supporting fabless companies, Integrated Device Manufacturers (IDMs) IDMs, Electronic Design Automation (EDA) tool providers, Outsourced Semiconductor Assembly & Test (OSATs) / Assembly, Testing, Marking, and Packaging (ATMPs) and foundries.

These providers offer a range of services that cover critical aspects of the semiconductor industry value chain including design, verification, testing, manufacturing and downstream support.

This research is the second edition of Everest Group's Semiconductor Engineering Services PEAK Matrix® Assessment, wherein we have presented an assessment of 18 engineering service providers featured on the PEAK Matrix®, along with the sourcing considerations for enterprises. This assessment is based on the RFI responses from providers, interactions with their semiconductor engineering leadership, client reference checks, and ongoing analysis of the engineering services market.

This report includes the profiles of the following 18 leading engineering services providers featured on the Semiconductor Engineering Services PEAK Matrix®:

- **Leaders:** Capgemini, HCLTech, LTTS, TCS, and Wipro
- **Major Contenders:** Alten, Cyient, eInfochips, HARMAN DTS, Quest Global, SETS, Tata Elxsi, Tech Mahindra, Tessolve, and UST
- **Aspirants:** Ignitarium, Mirafra, and Sasken

Scope of this report

Geography: Global

Industry: Market activity and investments of 18 leading engineering service providers

Services: Semiconductor engineering services

Overview and abbreviated summary of key messages

This report examines the global semiconductor engineering services landscape and assesses 18 leading engineering service providers. It focuses on service provider capabilities and market impact to develop various semiconductor solutions.

Some of the findings in this report, among others, are:

Service provider position and delivery capability

- Service providers can be categorized into leaders, major contenders, and aspirants on a capability-market-share matrix for semiconductor engineering services
- Capgemini, HCLTech, LTTS, TCS and Wipro are the current leaders in the global semiconductor engineering services market. However, several service providers are emerging as major contenders

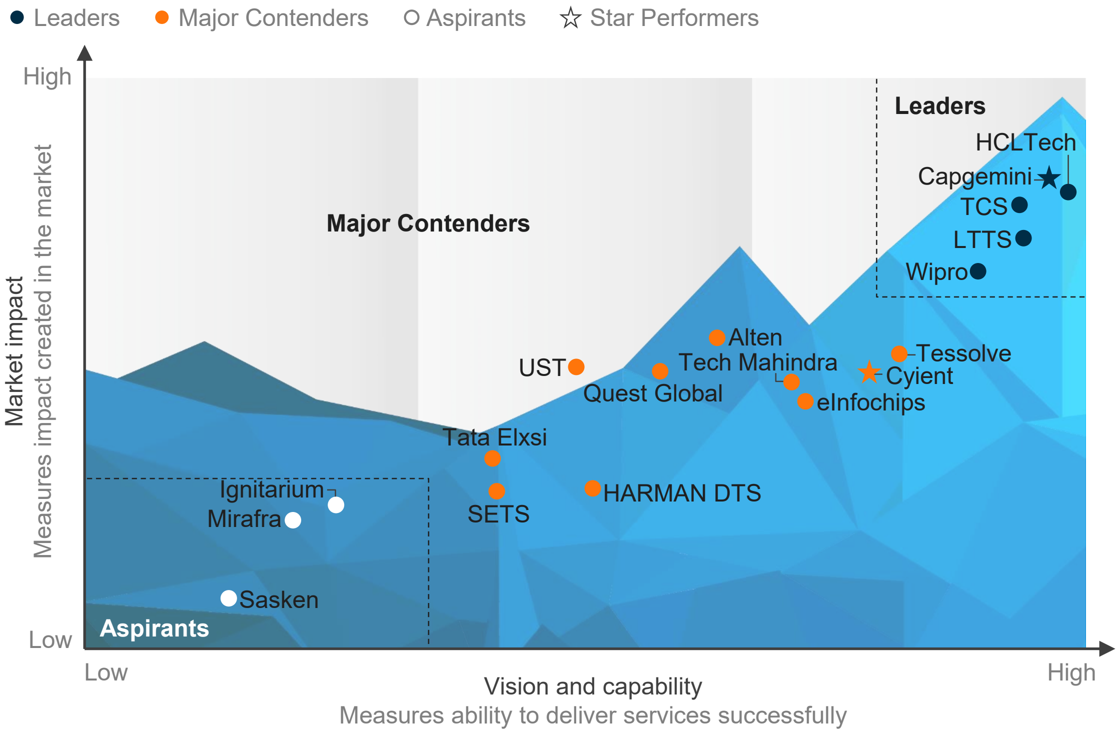
Service provider characteristics

- The Leaders segment comprises of firms that have developed dominant capabilities in offering multi-disciplinary semiconductor engineering services across design and verification, validation and testing, supply chain management, and downstream support
- Leaders have successfully expanded their reach and capabilities through both inorganic growth via strategic acquisitions and organic growth by forging partnerships with foundries, IDMs, EDA tool providers, and technology vendors. Service providers are also actively investing in the development of labs, Centers of Excellence (CoEs), and innovation hubs focused on next-generation technologies. These investments target advances in areas such as open-source architectures, 2.5D and 3D packaging, generative AI, smaller node sizes, and innovative materials
- Major Contenders also comprise both IT-heritage firms as well as pure-play engineering service providers
- These providers are proactively investing in talent development, establishing labs and CoEs, and creating IP and solutions in key areas such as low-power chipsets, RTL-to-GDS II integration, custom ASICs and SoCs, as well as AI-enabled chipsets and accelerator solutions

This study offers three distinct chapters providing a deep dive into key aspects of semiconductor engineering services market; below are three charts to illustrate the depth of the report

Everest Group PEAK Matrix® Assessment 2024

Everest Group Semiconductor Engineering Services PEAK Matrix® Assessment 2024[1]



1 Assessments for Alten, Ignitarium, Mirafra, Quest Global, Sasken and Tata Elxsi excludes service provider inputs and are based on Everest Group's proprietary Transaction Intelligence (TI) database, provider public disclosures, and Everest Group's interactions with insurance buyers
Source: Everest Group (2024)

Capability assessment

Illustrative example

Measure of capability: Low High

Providers	Market impact				Vision and capability				
	Market adoption	Portfolio mix	Value delivered	Overall	Vision and strategy	Scope of services offered	Innovation and investments	Delivery footprint	Overall
Provider 1									
Provider 2									
Provider 3									
Provider 4									
Provider 5									
Provider 6									

Everest Group's remarks on providers

Illustrative example

Measure of capability: Low High

Market impact				Vision and capability				
Market adoption	Portfolio mix	Value delivered	Overall	Vision and strategy	Scope of services offered	Innovation and investments	Delivery footprint	Overall

Strengths

- Provider 1, has built a strong ecosystem of partnerships, labs, and innovation centers, while also focusing investments on employee skillset development through certifications and CoEs
- It showcases flexibility in commercial constructs and leverages innovative pricing models such as outcome-based in client engagements

Limitations

- Provider 1 has a strong presence across North America and Europe regions, but it has a limited clientele across the APAC geography
- While it has engaged well with large and midsize enterprises, there are fewer engagements with small buyers, compared to peers

Research calendar

Engineering Research and Development

Published Current release Planned

Reports title	Release date
Interlude to Triumph: 5G Engineering Services State of the Market	Februrary 2023
Navigating the Future of the Automotive Landscape: ACES Automotive Engineering State of the Market	Februrary 2023
Unlocking Business Brilliance with Generative AI and Large Language Models	April 2024
Enterprise Immersive Experience Services PEAK Matrix® Assessment 2024	April 2024
Making Brownfield Factories Smarter and Greener	April 2024
Connected Product Engineering Services PEAK Matrix® Assessment 2024	May 2024
Connected Product Engineering Service Provider Compendium 2024	June 2024
Enterprise Immersive Experience Services – Provider Compendium 2024	July 2024
Leading the Pack: Trends for the Top 200 Engineering Research and Development (ER&D) Enterprises 2024	August 2024
ES Top 50™	September 2024
Semiconductor Engineering Services PEAK Matrix® Assessment 2024	October 2024
Semiconductor Engineering Service Provider Compendium 2024	Q4 2024
Connected Product Engineering Services State of the Market 2024	Q4 2024
Engineering Services Enterprise Pulse 2024	Q4 2024
Construction Industry State of the Market 2024	Q4 2024
Sustainable Engineering Services PEAK Matrix® Assessment 2024	Q4 2024

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