

Digital Engineering: An Opportunity Unparalleled

Engineering Services

Market Report – February 2020: Complimentary Abstract / Table of Contents

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Background of the research

This report is an Everest Group publication in collaboration with NASSCOMM on “Digital Engineering: An Opportunity Unparalleled,” which covers both global and Indian digital engineering R&D landscape for the year 2019.

The digital engineering market landscape, as brought out in the report, reflects the continued progress and interest the sector has drawn globally. Digital engineering has become the prime priority for enterprises across industries, with a significant portion of global ER&D spending going into creation of smart, connected, and intelligent products. In parallel, leverage of modern technology in the core engineering processes has also been increasing.

Background of the research

- The Engineering Services (ES) industry covers all activities associated with the creation of new products (hardware or software) across the entire product life cycle (product conceptualization, design, development, testing, manufacturing, and maintenance)
- In 2019, the global R&D spend stood at over US\$1.5 trillion, out of which the global engineering services business spend was estimated to be ~US\$780 billion, witnessing a 4-5% growth over 2018, which is expected to witness an uptick driven by digital engineering
- Digital engineering refers to engineering of digital products and leverage of digital technologies (such as IoT, 5G, robotics, AI/ML, mobility, cloud, automation, data & analytics, blockchain, and AR/VR) in engineering processes across the product life cycle. Share of digital engineering in business ER&D spend was estimated to be ~26% in 2019, witnessing a very significant 10% growth over 2018 compared to traditional engineering spend, which grew at a rate of ~3%
- The impact of digital engineering has been pervasive and none of the industry verticals remain untouched. The top segments that have seen significant adoption in recent years are automotive, health tech, and industrial
- While the global digital engineering sourcing market remains relatively untapped, it is estimated to be ~20% of the overall ~US\$90 billion global sourcing market by the end of 2019. It continues to evolve rapidly and is expected to grow at a CAGR of ~25% till 2025
- India is one of the leading locations for delivering digital engineering services. With India eyeing an aggressive ~US\$100 billion share in the ER&D global sourcing market spending by 2025, it is imperative to ensure a significant focus and accelerated capability building in the digital engineering space

Scope and methodology of the research

Scope of this report

- This report provides details on the global delivery of digital engineering services across various industry verticals with focus on India as a delivery location. It also provides detailed assessment of the global sourcing landscape, deep dive into various digital engineering segments, and India's digital engineering potential
- The report is divided into four broad sections:
 - **Digital engineering market landscape:** This section defines digital engineering and covers the overall market landscape in terms of market size, growth, share by key verticals, and impact of digital on ER&D across industries. Additionally, this section covers the global sourcing market landscape – market size and sourcing model adopted for digital engineering
 - **Assessment of the digital engineering verticals:** This section provides insights on relative comparison of various digital engineering verticals and deep dive into the top verticals in terms of top opportunities, key trends and drivers, industry examples, enterprise priorities, and implications for industry stakeholders
 - **India: Leading location for global delivery of digital engineering:** This section showcases India's digital engineering potential and provides details on delivery of digital engineering services from India, share of India in the global sourcing digital engineering market, key strengths enabling India for digital engineering supported by case studies, and India's goal for 2025
 - **Indian engineering ecosystem will need to strengthen fundamental enablers of digital engineering:** This section provides details on what initiatives India needs to undertake in order to establish itself as a location of choice for delivering digital engineering

Methodology of this report

The report is based on multiple information sources:

- **Primary interviews:** Primary interactions with enterprises, Global Capability Centers (GCCs), service providers, and other key market participants (e.g., industry experts and country associations)
- **Survey:** Insights from Everest Group and NASSCOM digital engineering survey (2019), which included responses from 30+ leading enterprises, GCCs, and service providers
- **Proprietary datasets:**
 - Everest Group's proprietary Global In-house Center (GIC) database that is updated quarterly with new setup activity, expansion/contraction of existing GCCs, divestitures, capability additions, as well as ongoing interactions with GCC and parent stakeholders
 - Everest Group's proprietary Transaction Intelligence database and Service Provider Tracking, both of which are updated quarterly
 - Access to market data through ongoing interactions with key global services stakeholders and our network with industry associations (i.e., NASSCOM and SMEs)

Overview and abbreviated summary of key messages

This report provides details on the global delivery of digital engineering services across various industry verticals with focus on India as a delivery location. It also provides detailed assessment of the global sourcing landscape, a deep dive into various digital engineering segments, and a view on India's digital engineering potential.

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

Digital engineering market landscape

- Business ER&D spend will breach the ~US\$1 trillion mark by 2025, growing at a CAGR of ~5.5%; global sourcing will continue to gain share in the overall spend
- Automotive and software products verticals continue to be the largest segments of global ER&D spending
- Businesses are increasingly adopting the global sourcing route for their digital engineering activities

Assessment of the digital engineering verticals

- The impact of digital engineering is pervasive across all verticals; however, maturity of digital engineering adoption differs widely across industries
- The top verticals that have seen significant adoption in recent years include automotive, health tech, and industrial

India: Leading location for global delivery of digital engineering

- Despite competition from other major ER&D delivery locations, India is well-positioned to tap into the digital engineering-led growth of the ER&D services market
- India's aspirational pursuit of ~US\$100 billion share in the ER&D sourcing market by 2025 will heavily depend on leveraging the digital engineering opportunity

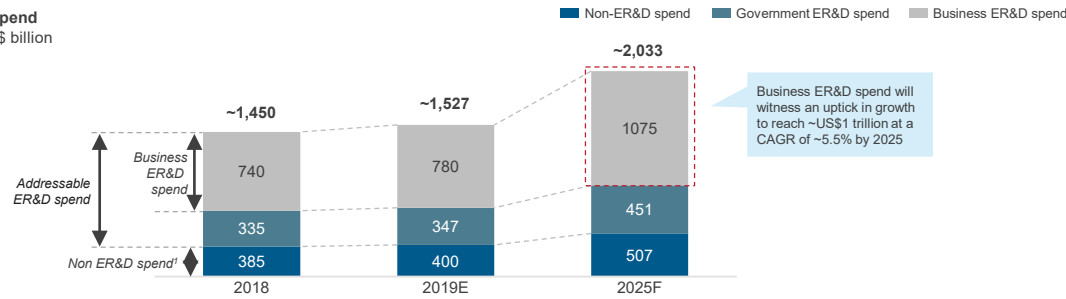
Need to strengthen the enablers of digital engineering in India

- Accelerated investments and initiatives in digital engineering will be required to put India on the accelerated growth trajectory of US\$100 billion ER&D revenue target by 2025
- Some imperatives include greater representation at global forums, improved infrastructure facilities, and targeted skill development programs

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

Digital engineering market landscape

Global R&D spend
2018-25F; US\$ billion



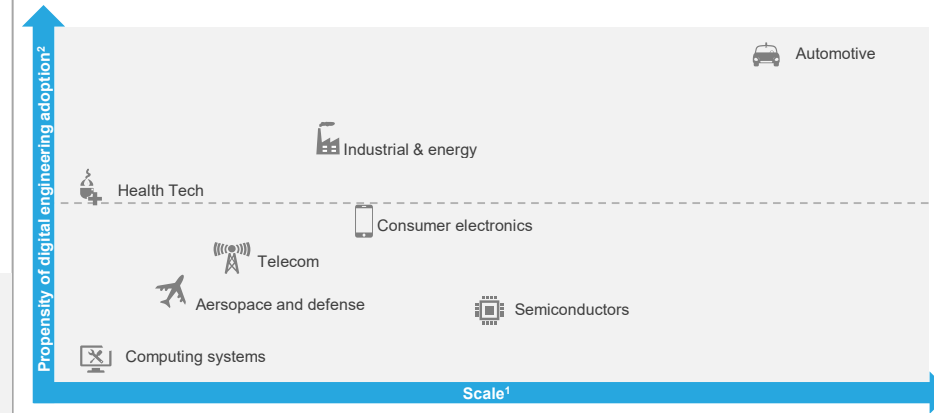
Addressable ER&D spending gaining momentum

- Global R&D spend was estimated at ~US\$1.45 trillion in 2018, witnessing a 3-4% growth over 2017. It is expected to breach ~US\$2 trillion by 2025 with increasing contribution from both government and businesses
- In future, the overall business ER&D spend on engineering services is likely to increase at a faster pace, given rising focus by enterprises on:
 - Investing in modern industry processes and assets
 - Increasing competency across next-generation engineering technologies
 - Designing products for the future needs of consumers and localizing their products
 - Improving speed-to-market and driving agile product development
 - Increasing regulatory and security standards

Assessment of the digital engineering verticals

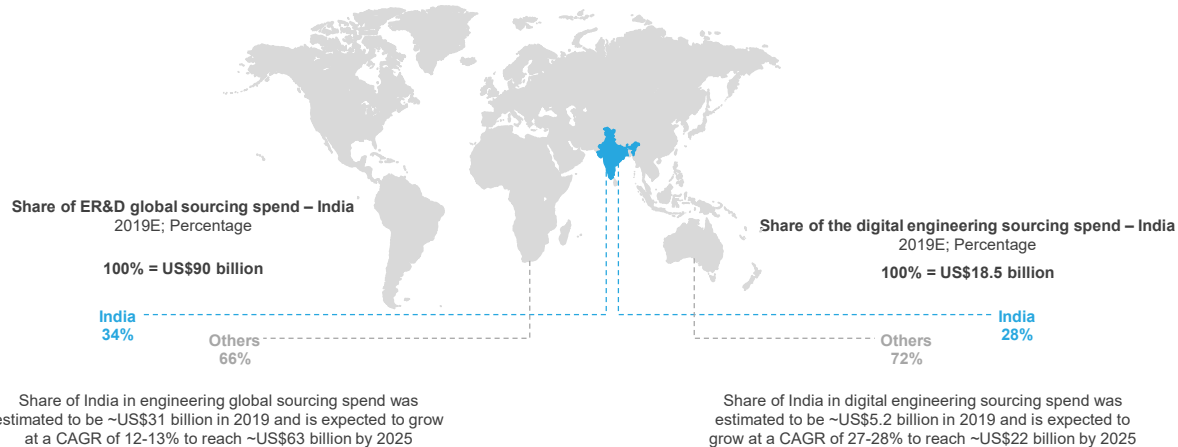
Digital engineering services delivery comparison (2019)

EVEREST GROUP ESTIMATES

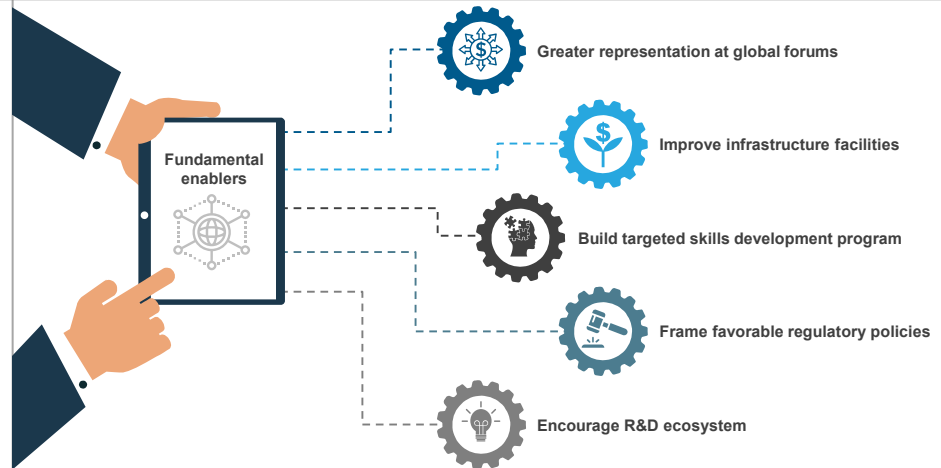


- Automotive, industrial & energy, and health tech constitute the top three segments in terms of propensity of adoption, given wide variety of use cases across the product value chain (these have been covered in detail in the subsequent pages)
- Consumer electronics and semiconductors verticals have increased their R&D spend on digital engineering
- Other verticals such as telecom, aerospace and defense, and computing systems have seen a recent increase in software leverage in engineering, but are still laggards as compared to the most mature ones

India: Leading location for global delivery of digital engineering



Need to strengthen the fundamental enablers of digital engineering in India



Research calendar – Engineering Services

Published
 Planned
 Current release

Flagship Engineering Services reports Release date

Software Product Engineering Services PEAK Matrix™ Assessment 2019: Engineering for the Digital World	August 2019
Automotive Engineering Services PEAK Matrix™ Assessment 2019: Convergence of Mobility and Digital	September 2019
Verification and Validation (V&V) Engineering Services PEAK Matrix® Assessment 2020	Q1 2020
Pinnacle report: Driving Innovation from Engineering Services GICs	Q1 2020

Thematic Engineering Services reports

The Imminent Wave of Consolidation in Industrial Internet of Things (IIoT) Platforms	March 2019
Engineering Services - Top 50	July 2019
Global Technology Centers (GTCs) in India: Software Products Enterprises' Solution to DIY	July 2019
Leading the Pack: Trends for the Top 200 Engineering Research & Development (ER&D) Enterprises	December 2019
Impact of Software-led Transformation in Engineering	December 2019

Digital Engineering: An Opportunity Unparalleled January 2020

Engineering Services 2020.....	Q1 2020
Engineering for the 5G world	Q1 2020

Note: For a list of all of our published ES reports, please refer to our [website page](#)

Additional Engineering Services research references

The following documents are recommended for additional insight on the topic covered in this report. The recommended documents either provide additional details on the topic or complementary content that may be of interest

1. **Software Product Engineering Services PEAK Matrix® Assessment 2019: Engineering for the Digital World** ([EGR-2019-40-R-3305](#)); 2019. Software is playing an increasingly important role in helping enterprises bring about innovation across products and services and deliver a superior user experience. As enterprises embrace this software-led innovation, they are also looking to drive modularity, scalability, and mass customization in their software products in order to meet the evolving end-user expectations. In this research, we present fact-based trends impacting the software product engineering services market, along with the assessment and detailed profiles of 25 service providers featured on the software product engineering services PEAK Matrix®
2. **Automotive Engineering Services PEAK Matrix® Assessment 2019: Convergence of Mobility and Digital** ([EGR-2019-40-R-3350](#)); 2019. The automotive industry is undergoing rapid evolution, ushered in by innovative and disruptive technologies. Next-generation technological themes have redefined the entire automotive landscape and both the existing giants and new entrants are focusing on enhancing their capabilities and developing pertinent expertise. In this research, we present fact-based trends impacting the automotive engineering services market, along with the assessment and detailed profiles of 22 service providers featured in the automotive engineering services PEAK Matrix®
3. **Leading the Pack: Trends for the Top 200 Engineering Research & Development (ER&D) Enterprises** ([EGR-2019-40-R-3340](#)); 2019. In today's world characterized by a constantly evolving technology landscape and rapidly changing customer needs, Engineering Research and Development (ER&D) has become a key contributor to an enterprise's ability to differentiate itself and stay competitive in the market. In this research, Everest Group deep dives into the global ER&D market and assesses the global top 200 enterprises with the highest ER&D spend across eight key industries, with special focus on the companies' key investment priorities and technologies driving ER&D spend. Additionally, the report provides industry-level insights on enterprise R&D spend growth, R&D intensity (R&D spend as a percentage of revenue), and a timeline of recent R&D initiatives and investments

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