



# **Identifying the Right Partners for Quality Management in the Engineering Services Industry – Service Provider Landscape**

Engineering Services (ES)  
Market Report – May 2017 – Preview Deck

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\* Banking, financial services, and insurance

## Custom research capabilities

- Benchmarking | Pricing, delivery model, skill portfolio
- Peer analysis | Scope, sourcing models, locations
- Locations | Cost, skills, sustainability, portfolio – plus a tracking tool
- Tracking services | Service providers, locations, risk
- Other | Market intelligence, service provider capabilities, technologies, contract assessment



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# Our research methodology is based on four pillars of strength to produce actionable and insightful research for the industry

- Market thought leadership
- Actionable and insightful research
- Syndicated and custom research deliverables

**1 Robust definitions and framework**  
(PEAK Matrix™, market maturity, and technology adoption/investment)

The service providers were mapped on Everest Group's Performance | Experience | Ability | Knowledge (PEAK) Matrix

**2 Primary sources of information**  
(Annual, contractual and operational RFIs, service provider briefings and buyer interviews, and web-based surveys)

Appendix: respondent profile

Geographic region in RFI responding	Number of respondents, % of total
North America	60%
UK and Europe	20%
Customized Global	10%
Asia Pacific	8%
Central & South America	2%
Africa	2%

**3 Diverse set of market touchpoints**  
(Ongoing interactions across key stakeholders, input from a mix of perspectives and interests, supports both data analysis and thought leadership)

Problem

Issue Issue Issue

Hypothesis Hypothesis Hypothesis Hypothesis Hypothesis Hypothesis

Data Gathering and Analysis

Conclusions and Recommendations

**4 Fact-based research**  
(Data-driven analysis with expert perspectives, trend-analysis across market adoption, contracting, and service providers)

Impact of new multi-process F&D contracts over time (Number of contracts)

Impact of multi-process F&D contracts over time (Number of contracts)

Average month of new contracts vs. extensions in F&D contracts (2006-2016)

Category	New contracts	Extensions
Accounts payable	60%	40%
Accounts receivable	60%	40%
Payroll	60%	40%
Tax	60%	40%
Analytics	60%	40%
Budget & forecasting	60%	40%
Regulatory compliance & reporting	60%	40%

The best practice F&D processes from an outsourcing perspective often get implemented quickly as a response to the top issues that make our client customers in the supplier's ability to deliver value.

- Proprietary contractual database of large active contracts (updated annually)
- Year-round tracking of 25+ service providers
- Dedicated team for engineering services research
- Over 20 years of advising clients in IT, BPO, and engineering decisions
- Executive-level relationships with buyers, service providers, technology providers, and industry associations

# Background and methodology of the research

## Background of the report

### Quality Management (QM) is critical to engineering services

- Enterprises have realized that lack of QM activities results in high cost and loss of brand image
- Superior quality of products act as a differentiating factor

### Drivers for sourcing quality management activities

- Accelerate speed-to-market
- Localize existing products for new markets
- Reduce cost
- Testing at scale

### Implementation of QM in Engineering Services (ES)

Quality management in the ES industry covers all activities that are involved in the validation, verification, and testing of new products (hardware or software) during all stages of the product lifecycle

## Scope of the report

This research covers the following elements of quality management:

### Sourcing landscape of QM activities

Study the drivers, trends and market size of quality management sourcing

### Role of service providers

Understand the role of service providers and their engagement with enterprises

### Service providers for QM activities

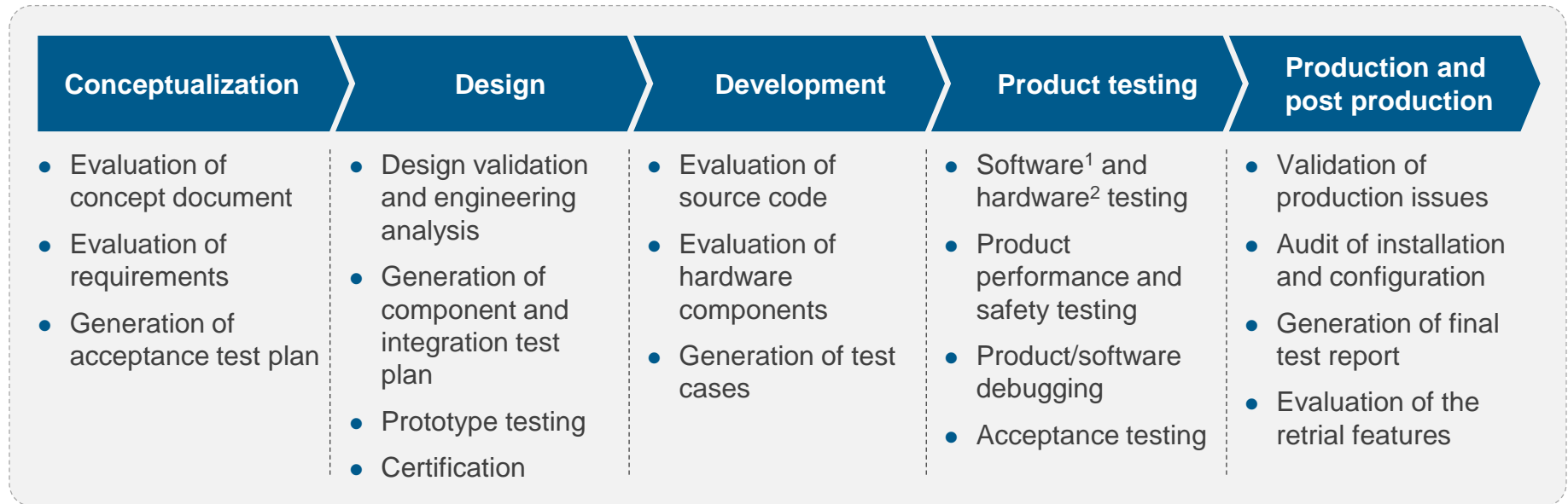
Analysis of 23 major service providers based on their focus, coverage, and functional expertise in quality management

## Methodology of the report

This report draws insights from Everest's Group existing market report "**The Evolving Demand Paradigm in the Engineering and Research and Development (ER&D) Services Industry – November 2016**" and "**In pursuit of product excellence: Quality Management in the Engineering Services Industry – June 2017.**" The research is anchored on interactions with multiple service providers and enterprises, augmented with Everest Group's expertise and proprietary transaction intelligence database and service provider tracking, both of which are updated quarterly.

# Quality management is an integral component of the ES value chain as the product moves from concept to production stage

Quality management contains a set of activities needed to maintain a desired level of excellence of the product



Quality management

1 In the engineering services value chain, software-related services include developing all Commercially Off The Shelf (COTS) products and does not include System Integration (SI), custom application development, maintenance, and testing

2 Hardware includes all physical components including tools, computer hardware, electronic hardware, networking hardware, and other such physical products or product components

Source: Everest Group (2017)

# This report focuses on quality management; testing activities can be classified into five types across industry clusters

The following taxonomy is used to define testing activities across all industry verticals and segments referred to in our research.

## Mechanical

- It involves all the techniques which intend to measure a product's properties such as elasticity, tensile strength, elongation, fracture toughness, impact resistance, and fatigue limit
- It includes functional testing, stress testing, and load testing

## Electrical

- It involves examination of electrical appliances and equipment to ensure they are working as expected and are safe to use
- It includes Portable Appliance Testing (P.A.T.), leakage test, and insulation resistance test

## Software

- It is a process of validating and verifying software products for business requirements
- It includes Application Programming Interface (API) testing, network testing, mobile testing, web services testing, platform testing, and migration testing techniques

## System

- It is testing of the complete and fully integrated product. It is end-to-end check including external peripherals in order to check its interaction with the system
- It includes acceptance testing, compatibility testing, and integration testing techniques

## Regulatory

- It involves certification for the product, compliance check, fulfilling government norms, industry-specific, and geo-specific regulatory measures
- It includes usability testing and security testing techniques

Source: Everest Group (2017)

# Overview and summary of key messages

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This report delves into the advantages, opportunities, challenges, and risks faced by enterprises while engaging with service providers. Post classification of testing activities across industry clusters, we have assessed 23 service providers offering quality management activities based on their expertise, financials, industries served, and breadth & depth of their offerings to understand the outsourcing engagement model and how they leverage next-generation technologies.

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

- Enterprises are increasingly adopting test automation techniques to reduce time-to-market and to increase accuracy
- Enterprises are constantly tracking the impact and evolution of new technologies (e.g., machine learning, artificial intelligence, etc.) on quality management activities
- Enterprises are investing to modernize their legacy testing environment to an advanced digitally equipped infrastructure
- Service providers are packaging automation in their service offerings to align with buyers' demand of reducing run costs, ensure speed-to-market, and improve efficiency and quality
- Service providers are investing in testing infrastructure and talent to keep them updated with latest technologies
- Service providers are developing expertise in digital testing techniques in order to help enterprises to realign their business strategy
- Giant IT service providers such as Infosys, TCS, and Cognizant are entering in the engineering services space seeing the maturity of the IT industry



# The report covers the role of service providers and analysis of 23 engineering service providers in quality management services space

## Leading service providers in the engineering quality management services space

**Global and Indian IT Service Providers (ITSP) in engineering services space**

Capgemini, epam, HCL, Infosys, LUXOFT, Mindtree, TATA CONSULTANCY SERVICES, Tech Mahindra, WIPRO

**Global and regional Pure Play Engineering Service Providers (GPPEs)**

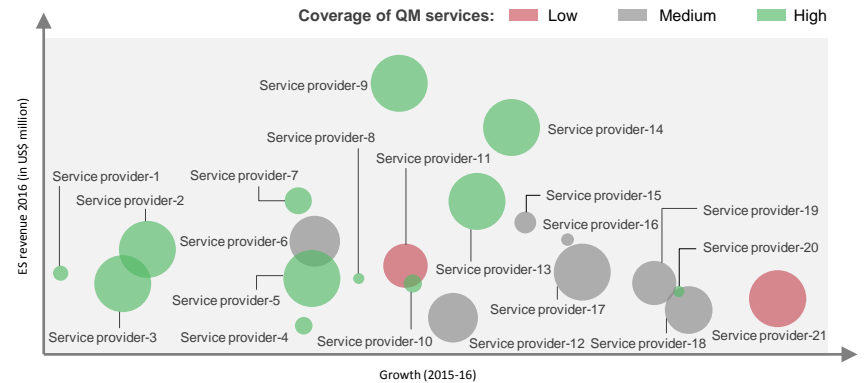
AKKA, ALTRAN, ANSYS, BERTRANDT, EDAG, Globant, HARMAN, SEMCON

**Indian Pure Play Engineering Service Providers (IPPES)**

Aricent, CYIENT, GlobalLogic, L&T Technology Services, QUEST

## Service provider market landscape

Service provider revenue in US\$ million (FY2016) and growth (FY 2015-16) of their engineering services business unit, where size of the bubble represent focus on engineering services



## Role of service providers

Services providers are enabling enterprises to:

- Reduce cost**
- Localize and access to new markets**
- Access expertise and mitigate risk through specialists**
- Adhere to complex regulatory policies and security standards**
- Improve efficiency and quality**
- Ensure speed-to-market**
- Overcome internal capacity constraints**
- Develop quality management as a strategic process**





## Service provider assessment criteria

In this dynamic environment, service providers are facing a lot of challenges, but at the same time have a plethora of opportunities. They are constantly looking to drive innovation, provide engineering efficiency, and improve the performance and functionality of products. They try to acquire new capabilities to keep them abreast in this competitive global marketplace.

At-a-glance				
Overview	Financials	Functional expertise	Industries served	Market position
<b>Objective</b> A brief overview of the company and high-level strategy	Size of engineering services practice	A summary of service provider's functional areas, QM services offered, and testing methods	Service provider's capabilities in select industrial segments	A summary of key investments – M&As and partnerships, delivery location investments, and infrastructure investments
<b>Information</b> The data presented in this section is based on the information available in the public domain such as companies' website, news articles, and blog posts. It includes Everest Group estimates where not directly reported				

# This report covers four industry clusters comprising 13 industry segments that account for over 90% of the annual global engineering services spend

We use the following taxonomy to define industry clusters and segments in our research

Cluster	Segment	Definition
 <b>Software</b>	<b>Software products</b>	Development, testing, and maintenance of software products
 <b>Mechanical</b>	<b>Automotive</b>	Design, manufacturing support, and operations support for automobiles, motorcycles, trucks / heavy engines, and their engineering systems
	<b>Aerospace and defense</b>	Design, manufacturing support, and operations support for aircraft, space craft, and their engineering systems
	<b>Marine</b>	Design, manufacturing support, and operations support for boats, ships, other marine vessels/vehicles, and their engineering systems
 <b>Hi-tech</b>	<b>Semiconductors</b>	Design, development support, and engineering services for embedded systems and semiconductor devices
	<b>Telecom</b>	Design, manufacturing support, and operations support services for telecom and networking equipment (routers, switches, modems, etc.)
	<b>Consumer electronics</b>	Design, manufacturing support, and post-production support for direct-consumer equipment and appliances
	<b>Computing systems</b>	Design, manufacturing support, and support services for computer hardware and accessories (Bluetooth peripherals, chipsets, etc.)
 <b>Industrial and energy</b>	<b>Industrial, energy, chemicals, and natural resources</b>	Design, development support, and operations support for industrial, energy, chemical production, and natural resources sectors

Source: Everest Group (2017)

# Glossary of key terms used in this report

Term	Definition
ACV	Annualized Contract Value is calculated by dividing the Total Contract Value (TCV) by the term of the contract
API	Application Programming Interface is a set of functions and procedures that allow the creation of applications which access the features or data of an operating system, application, or other service
ATE	Automatic Test Equipment
GIC	Global In-house Center
Global sourcing / offshoring	Transferring business process activities or its complete ownership to a different country where the company receiving the service is located, is referred to as offshoring or global sourcing
HiL	Hardware-in-the-Loop (HiL) simulation is a technique that is used in the development and test of complex real-time embedded systems
HMI	Human-Machine Interfaces
IoT	Internet of Things is the internetworking of physical devices, vehicles, buildings and other items through sensors, software, and network connectivity
KPI	Key Performance Indicator
PAT	Portable appliance testing (PAT) is the term used to describe the examination of electrical appliances and equipment to ensure they are safe to use
Service provider	A company/entity that provides outsourcing services to another company/entity
TCV	Total Contract Value is the potential revenue associated with the contract and estimated at the commencement of the contract (e.g., sum total of revenues accrued to the service provider from the contract over the entire contract term, usually measured in millions of dollars)

# ES research calendar

■ Published
 ■ Current

Topic	Release date
Innovation Beyond Borders – Global Talent Hotspots for Engineering Services and Research & Development (ER&D) .....	August 2016
The Evolving Demand Paradigm in the Engineering and Research and Development (ER&D) Services Industry .....	November 2016
In Pursuit of Product Excellence: Quality Management in the Engineering Services Industry .....	May 2017
Identifying the Right Partners for Quality Management in the Engineering Services Industry – Service Provider Landscape .....	May 2017
Reimagining Design Thinking for the Human-Machine Nexus in the Global Connected Ecosystem .....	Q2 2017

# Additional research references

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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. **In pursuit of product excellence: Quality Management in the Engineering Services Industry** ([EGR-2017-0-R-2181](#)); 2017. This report provides a detailed analysis on quality management activities in the engineering services industry. It covers market landscape of quality management services and digital transformation of product validation activities in ES industry
2. **The Evolving Demand Paradigm in the Engineering and Research and Development (ER&D) Services Industry** ([EGR-2016-0-R-1977](#)); 2016. This report provides an overview of the engineering services industry. It covers demand trends in engineering services industry across different industry verticals and global sourcing trends across major ER&D segments
3. **Innovation Beyond Borders – Global Talent Hotspots for Engineering Services and Research & Development (ER&D)** ([EGR-2016-2-R-1865](#)); 2016. This report provides an in-depth view of the ER&D global sourcing industry from a talent perspective. It covers the global distribution of ER&D talent and cost competitiveness of leading global sourcing locations providing readers with an up-close view of global talent “hotspots” for various ER&D segments

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## About Everest Group

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