



Offshoring Platform for CIOs/CFOs

FLATTENING the WORLD:

The Economic, Political & Technical Impact of Global Sourcing

Emerging Trends in Engineering BPO Services

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Global Outsourcing of Engineering presents significant opportunities

Market Size and Growth:

	<u>2006</u>	<u>2012</u>	<u>CAGR</u>
Tot. Engineering Spend	\$850B	\$930B	1-2%
Tot. Outsourcable Spend	\$170 - \$250B	\$280-375B	6-8%
Emerging Markets Spend	\$10 - \$15B	\$35-\$55B	<u>23-24%</u>

Source: NASSCOM & Booz Allen Hamilton Report: "Globalization of Engineering Services", Accenture Engineering Services analysis

Note: Emerging Markets spend includes global off-shoring engineering services outsourcing spend to low-cost countries: India, China, Mexico, East Europe

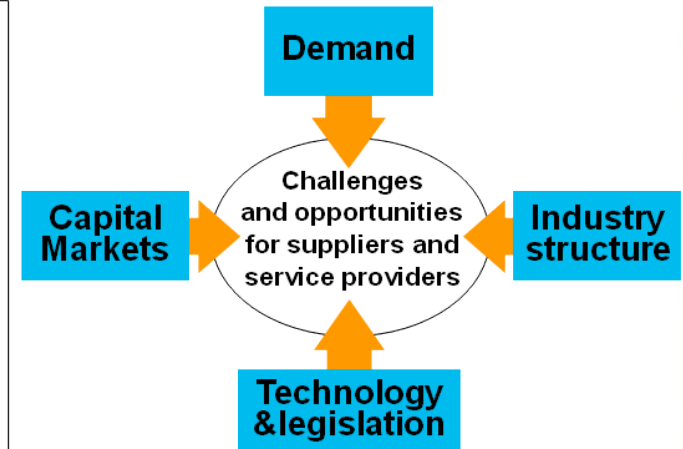
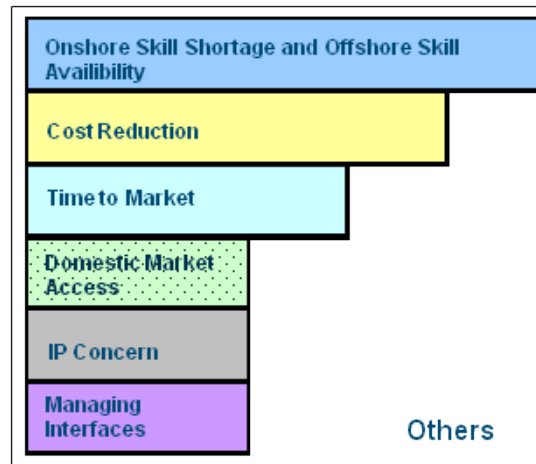
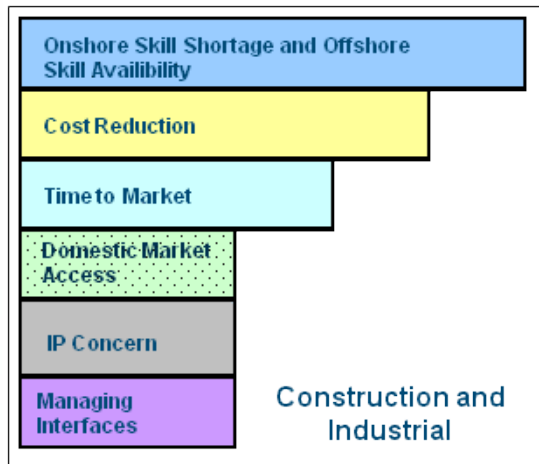
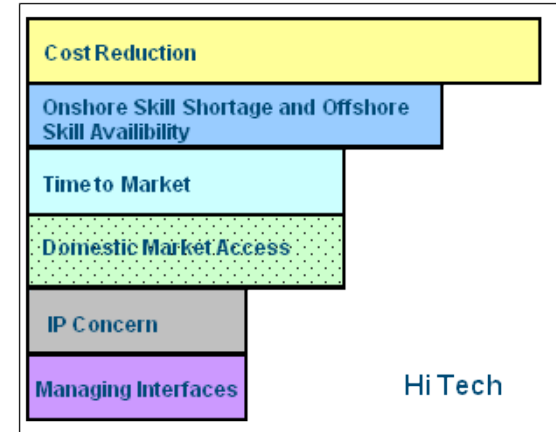
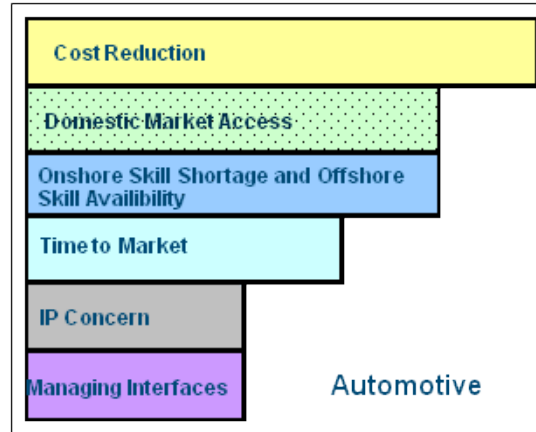
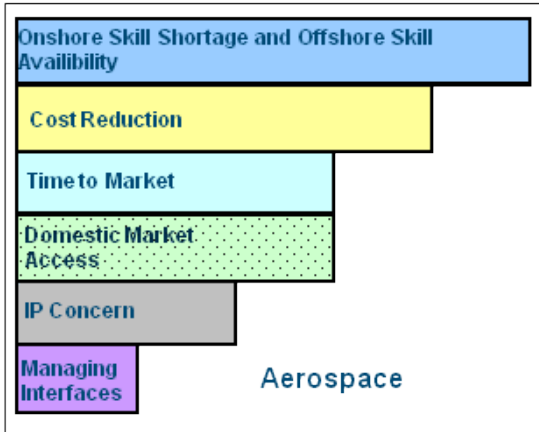
While global engineering spend is flat, total outsourcable spend is growing 3-4 times the rate of total spend and emerging markets are growing in double digits.

Key Trends in Engineering Outsourcing

Key Trends:

- India-focused Off-shoring Market for ESO is expected to grow rapidly to \$50B by 2020:
 - \$1.2B in 2006 - \$2.8B in 2009 – actual CAGR 33%
 - \$2.8B in 2009 - \$45B in 2020 – estimated CAGR 30%
- ESO market is taking a similar path that the IT outsourcing market took 10-15 years ago.
- Companies are increasingly seeking to develop products for the fast growing developing markets.
- Fragmented services market with a range of onshore and offshore players:
 - Average profitability (EBIT) for onshore players is in the range of 5-15% and for Indian Pure Plays (IPPs) is between 15-25%.
- Key Industry Verticals driving ESO: A&D, High Tech, Industrial Equipment, Auto, Utilities, and Oil and Gas.

Each Industry has drivers that are similar and yet significantly different



Source: Accenture research/experience



Industry changes impacting engineering

– **Automotive:**

- Increasing number of new products/variants and game changing events: Electric cars, Car Electronics, IVI, and Telematics share of the total product value will continue to increase.

– **Oil and Gas Production:**

- Large new Oil and Gas Fields around the world require enormous amounts of Engineering for Program Management, Rig and Refinery Design Support, Collaborative Engineering Tool Integration and Support, and Technical Documentation.

– **Utilities:**

- Demand for Smart Grid Design and Support, Smart Meter roll-out is taxing the capabilities of Utilities in house engineering and creating a developing new market.

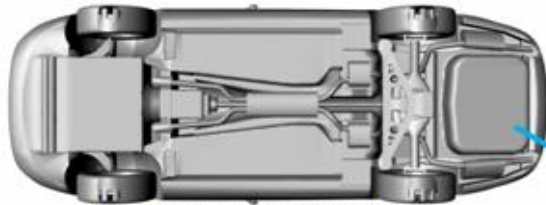
– **Construction:**

- Rise in demand for infrastructure improvements in the developed world and huge demand for new construction in the BRIC countries.

– **Demographics**

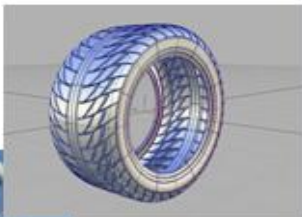
- Availability of engineering resources in developed countries is low creating the need to shift to a balanced demand model between On Shore and Off Shore Centers in India, China, Eastern Europe, Philippines, & others

Traditional Engineering Services – By Themselves Will Not Be Enough !



Sport car space allocation

Wheel – 3D Model



Car Engine – 3D Model



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Mechanical and Electrical Engineering Offerings

Design

Concept Design

- Space Allocation,
- Structural Arrangements,
- Layout
- Material Selection,
- Interfaces
- Manufacturability, Reparability

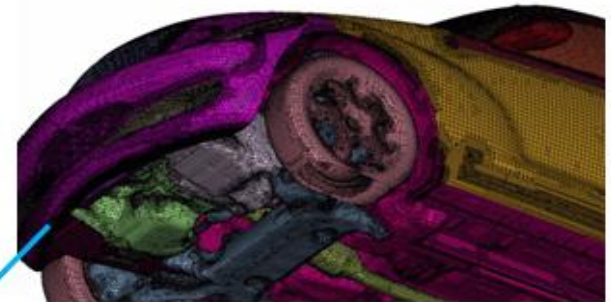
Detail Design

- Preliminary Sizing
- Modeling
- Manufacturing drawings

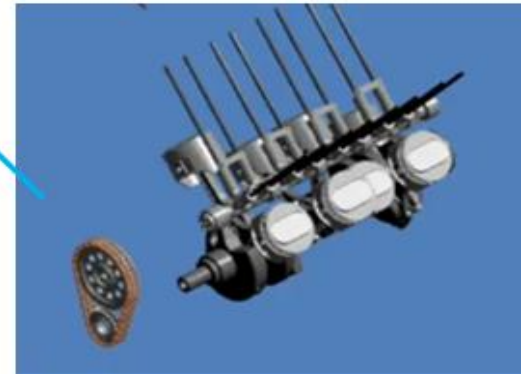
Design Support

- End to end responsibility
- New Product Introductions or Current Product Improvement
- Value engineering

Detailed Mesh around a Passenger Car



Engine Manufacturing Drawing

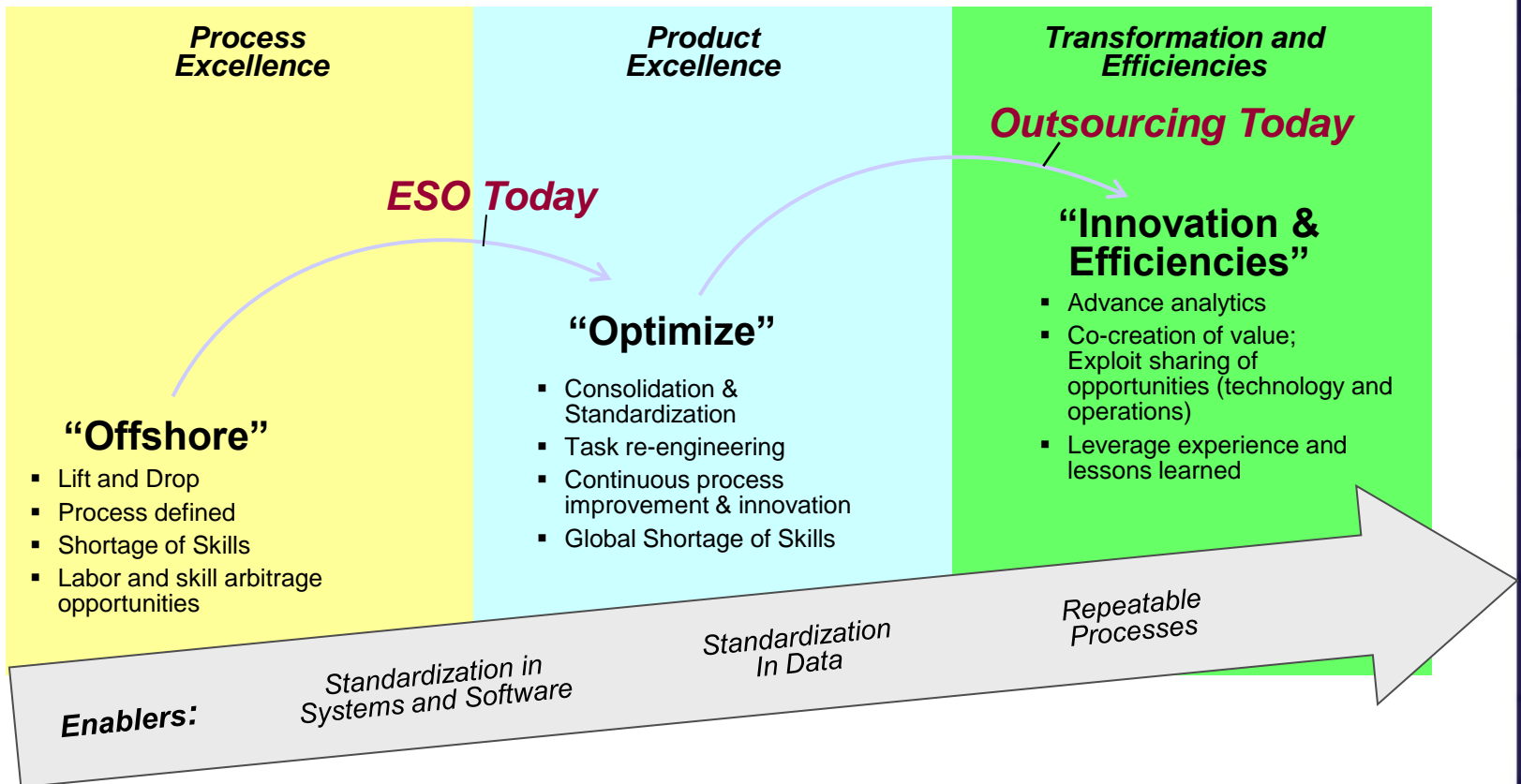


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Engineering Market is evolving similar to the IT Outsourcing Market

Increased ESO demand is driven by cost reduction, skills shortage, the availability of offshore talent, and the recognition that product innovation can be further industrialized, and systems and data standardized.

Engineering Function:



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Engineering Services Competitive Landscape

Several types of engineering services providers have emerged with the largest providers pursuing cost based strategies while the smaller ones focus on a geographic area or a specific domain.

Factory Based

Large IT Firms

- Large IT firms that are focusing on the engineering services space.

Niche / Focused Firms

- Strong focus on engineering and product lifecycle management.

Represents 60+% of Total Indian Market Share

Domain Expertise

Engineering Firms

- Specialized engineering firms, varying in size, primarily located in developed markets.

Manufacturing Firms

- Manufacturing firms that have evolved an engineering services capability.

Process Management

End-to-End Players

- Comprehensive solutions from design through manufacturing, typically EPC companies in process industries.

Source: Nasscom & Booz Allen Hamilton Report: "Globalization of Engineering Services", August 2006

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Key aspects for a successful strategy in the Engineering Services market

1

General margin models and evolution of capabilities

The range of engineering work comprises a “stack” and varies in realizable margin and “lumpiness” of work.

A complete stack is needed for a sustainable high margin model. Process and technology innovation are required for differentiation, while low cost execution capability is needed for the bottom of the stack for cost performance reasons.

2

Industry and geographic specificity

The drivers of engineering services, and the type of domain skills vary by industry.

Headcount scalability is possible at the bottom of the stack, but industry experience is more important at the top of the stack. Further, geo aspects play a key role as the situation is different in each country.

For example, Brazil is looking to use local talent first (vs. off-shoring) , so local competency development is a key.

3

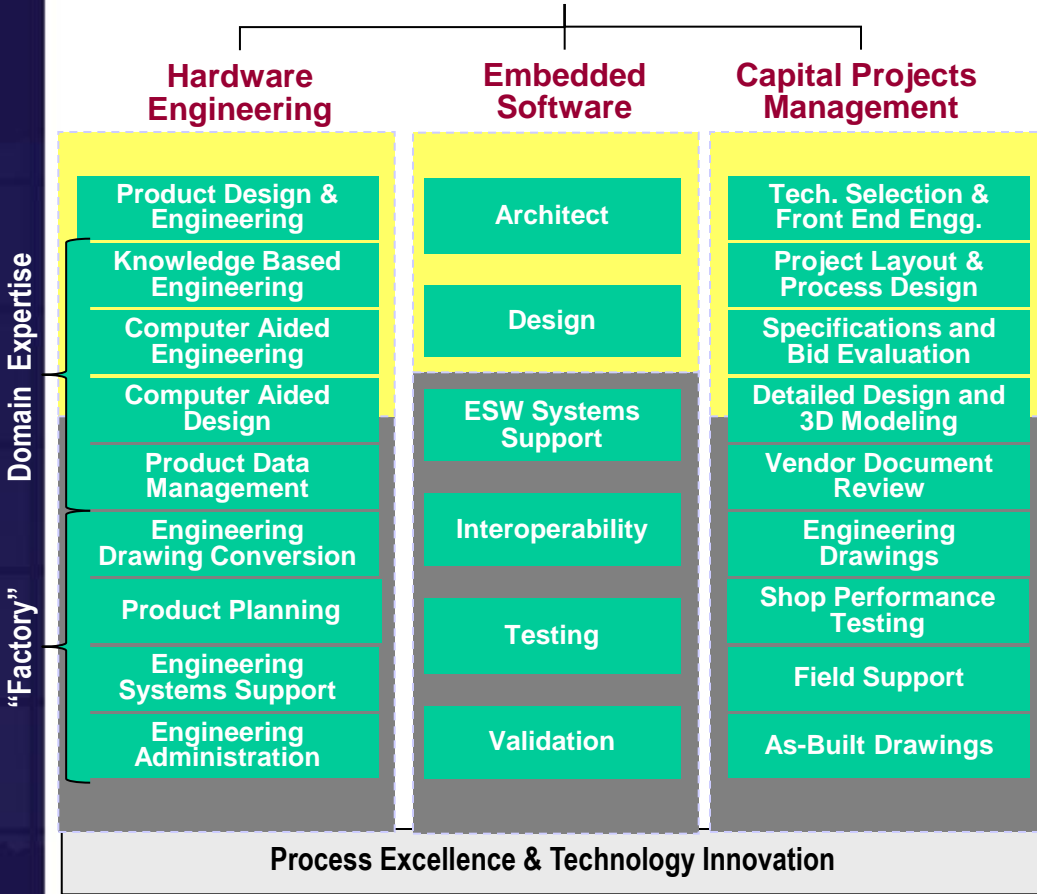
Competitive considerations

This is still a fragmented market with a wide variety of competitors whose business models are continuously evolving.

Existing Players will be challenged by smaller and more agile competitors for high-end engineering skills. Global players with end to end capabilities are increasingly in demand.

The "end-to-end stack" of Engineering Services

Engineering Services Outsourcing Stack



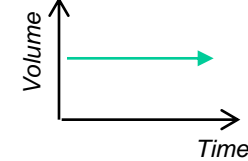
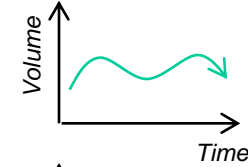
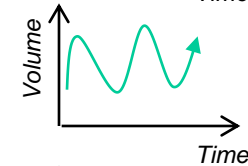
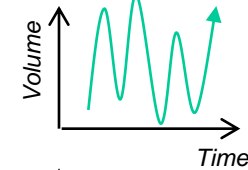
Characteristics of Services Stack

Required Skills

Industry Specific Engineering Skills

Basic Engineering Skills

Service Volatility



Price Elasticity

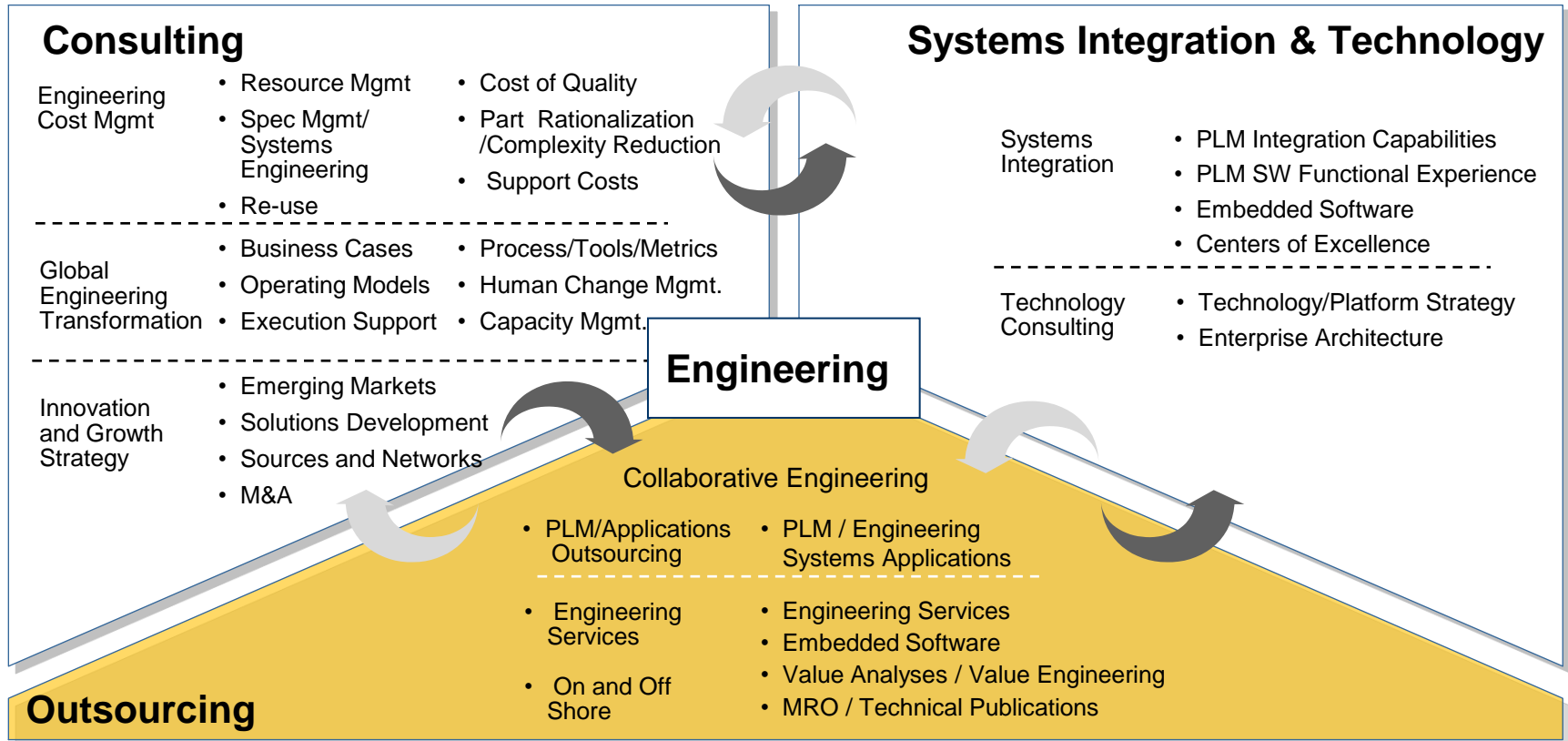
Premium Pricing
High value-add pricing

Commodity Pricing
(Rate Card Negotiations)

- Industry-specific Engineering Skills
- Basic Engineering Skills

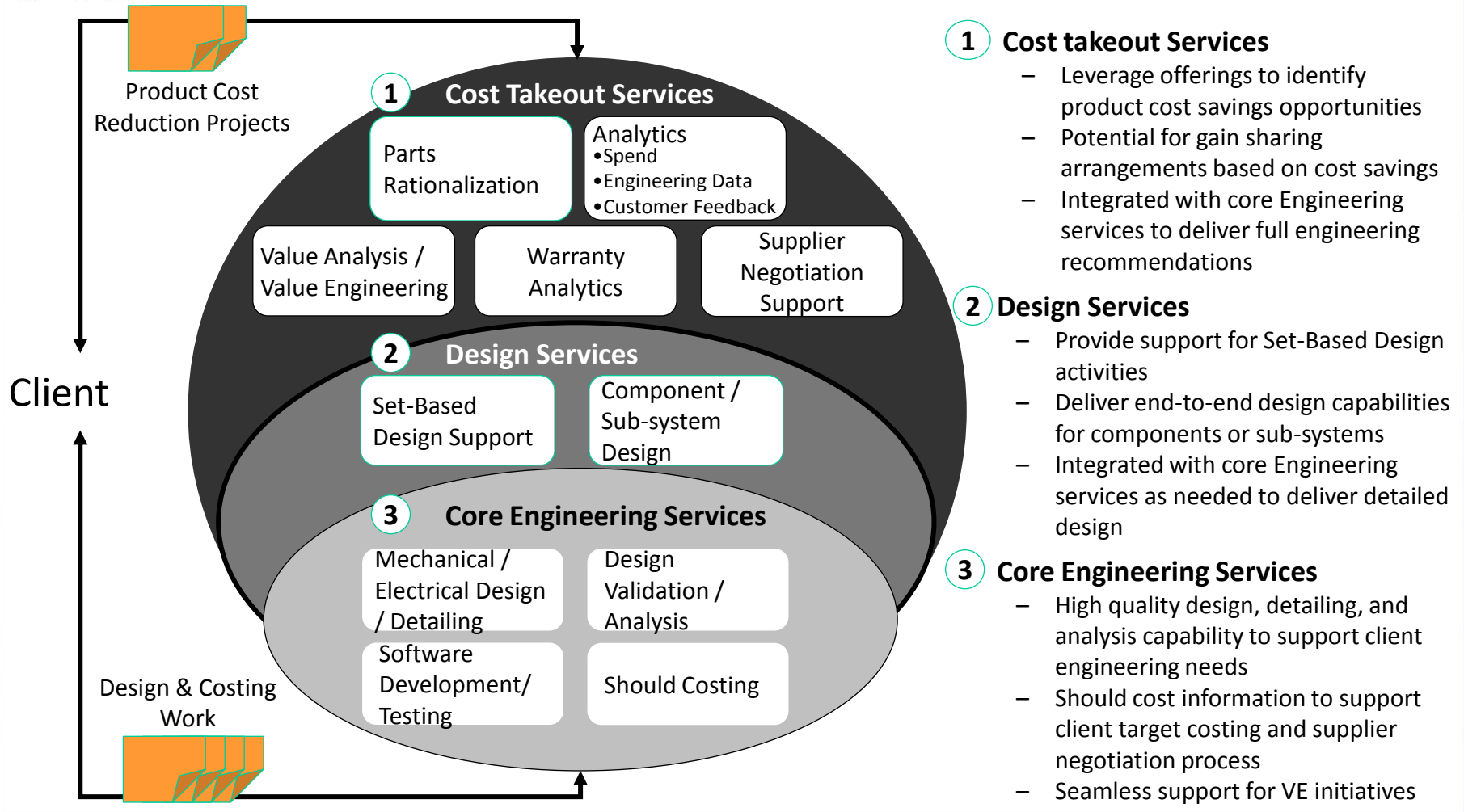
Engineering Services is moving to a Global End-to-End support model

Integrated offerings of Consulting, Systems Integration, and Outsourcing



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Accenture believes in a Design Center of Excellence Operating Model



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THANK YOU!

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