



Defining future business operations

# HFS Blueprint Report

# **Software Product Engineering Services**

## Excerpt for TCS

**August 2018 | Authors:**

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# What you'll read

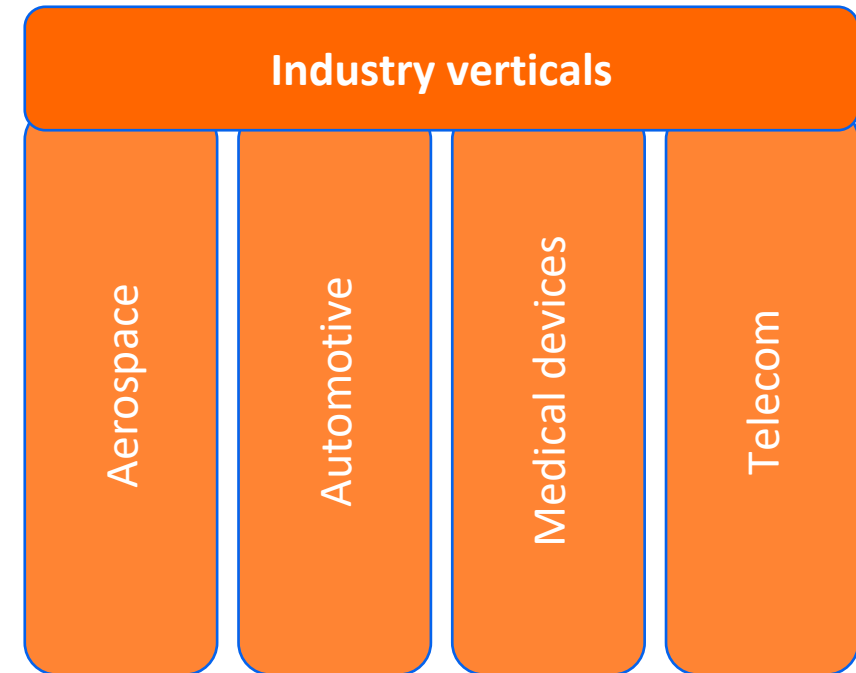
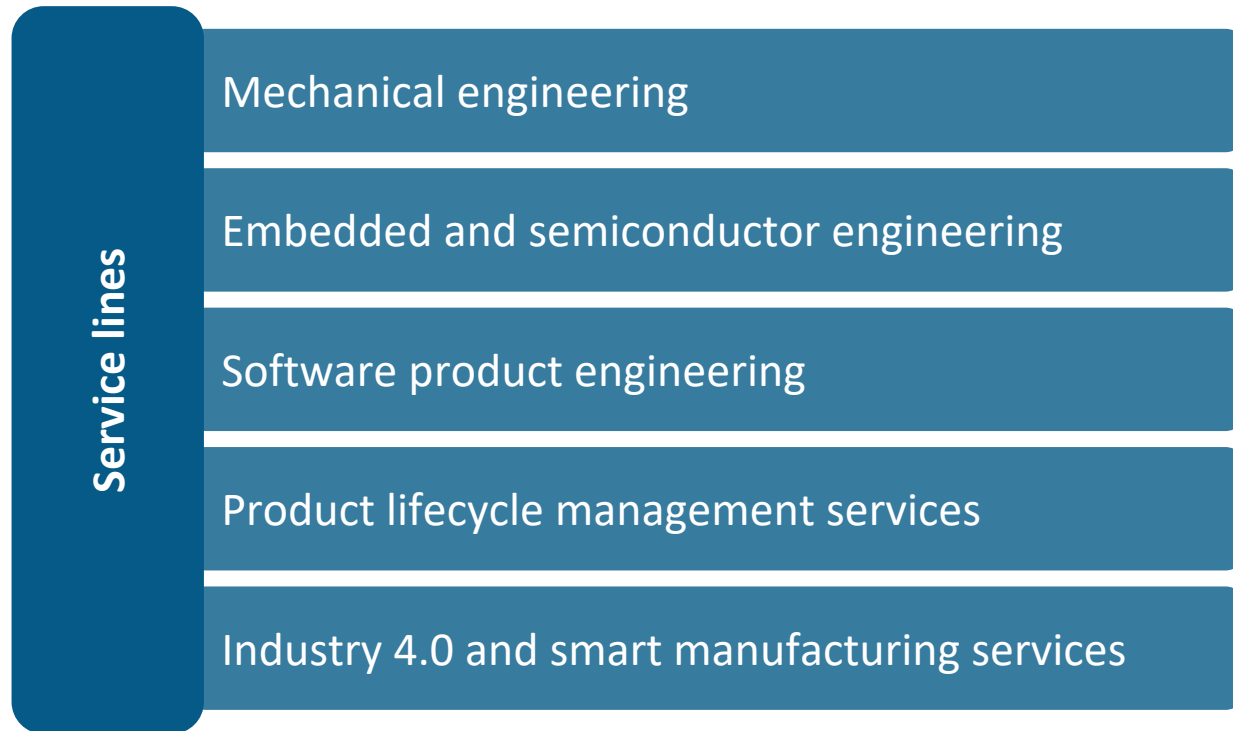
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# Introduction to the HFS Blueprint Report: Software Product Engineering Services

- » *The HFS Blueprint Report: Software Product Engineering Services* applies the HFS Blueprint methodology to the software product engineering services marketplace. This HFS Blueprint Report reviews the software product engineering services market across the value chain for new product development, product sustenance, product testing, product deployment, product support, and product management services.
- » This report includes profiles and assessments of 25 service providers of software product engineering services.
- » Unlike other quadrants and matrices, the HFS Blueprint identifies relevant differentials between service providers across a number of facets in two main categories: innovation and execution.
- » For this report, HFS has increased the attention paid to innovation criteria in particular, and adopted the new 2018 Blueprint Grid layout to assess service providers. This grid now recognizes up-and-coming service providers (High Potentials) that score higher on innovation criteria than on execution criteria as the providers build these practices. This is in addition to the existing rankings for highest overall performance (Winner's Circle) and strong combined innovation and execution performance (High Performers).

# HFS engineering services coverage

*Comprehensive and unvarnished coverage that allows clients to make smart decisions about the rapidly evolving engineering services market*



- » *Repository of 50+ research reports including Blueprints, PoVs, and Market Analyses*
- » *Coverage across 200+ engineering services providers*

- » *Database of 2,000+ (and expanding) engineering engagements*
- » *Research methodology driven by tales from the trenches*
- » *Experienced team of practitioner analysts*

# HFS definition: Software product engineering services value chain

New product development	Product sustenance	Product testing	Product deployment	Product support	Product management
<ul style="list-style-type: none"> <li>» Ideation and conceptualization</li> <li>» Architecture</li> <li>» UX design</li> <li>» Prototyping</li> <li>» Core development</li> </ul>	<ul style="list-style-type: none"> <li>» Product reengineering</li> <li>» Maintenance</li> <li>» Enhancements</li> <li>» Change management</li> <li>» Localization</li> </ul>	<ul style="list-style-type: none"> <li>» Unit testing</li> <li>» Functional testing</li> <li>» Non-functional</li> </ul>	<ul style="list-style-type: none"> <li>» Build and release management</li> <li>» Customization</li> <li>» Documentation</li> <li>» Data migration</li> </ul>	<ul style="list-style-type: none"> <li>» Helpdesk</li> <li>» Technical support</li> <li>» Upgrades</li> <li>» DevOps</li> </ul>	<ul style="list-style-type: none"> <li>» Developing product roadmap</li> <li>» Managing product user groups</li> <li>» Customer relationship management</li> </ul>

# Executive summary

# Key highlights: State of the software product engineering services market

- » **Software product engineering transformation by digital technologies:** ISVs and internet companies are transforming their product and services portfolio with the emerging digital technologies. Enterprises are also building their own digital platforms. This transformation is shaping the future technology landscape of software product engineering, opening up opportunities, and posing new challenges. Service providers need to build capability to conceptualize these technologies and application of the same in the client business landscape.

The 10 key trends driving the software product engineering services market are as follows:

1. Co-investment model-based engagement
2. Consolidation of outsourcing partners
3. Focus on consulting
4. New business model
5. Focus on strategic outsourcing
6. Exploring new geographies
7. Increasing influence of digital technologies
8. Expertise in domain knowledge
9. Exploring enterprise segment
10. IP sustenance deals

# Key highlights: State of the software product engineering services market

- » **Different software product engineering approaches by service providers:** The 25 service providers we evaluated for this Blueprint approach this market in two ways: (1) the pure-play engineering service providers that primarily cater to the ISV customer segment; (2) service providers with strong IT offerings catering to wider market of ISVs, internet companies, and enterprises.
- » **Emerging technologies in software product engineering:** New technology areas such as DevOps, agile, and other digital technologies are influencing different areas of software product engineering for better business outcomes including less time-to-market, cost reduction, and better customer experience.
- » **Challenges in software product engineering services:** Some of the challenges in software product engineering services are the following:
  - Advanced digital technologies are transforming the software product engineering space. The challenge for the service providers is to invest in artificial intelligence, automation, and other technologies to develop a solutions portfolio, build resource capability in these next generation technologies, and create a robust partnership ecosystem.
  - Clients are becoming more cost conscious and renegotiating rates with expected quality services as well. The requirement of onshore resources is increasing, in part due to less time-to-market for products and implementation of emerging technologies. This has increased the cost burden of the service providers and started to impact margins.



# Research methodology

# Blueprint research methodology

## Data summary

- » Data was collected in Q1 2018 and Q2 2018, covering buyers, providers, and advisors/influencers of software product engineering services.\*\*
- » More than 1,000 data points were collected, covering 25 major service providers.
- » Revenue distribution of industry, value chain, and solutions is estimated by HFS.

## Service providers mentioned



\*\*The data for GlobalLogic, Luxoft, and Pactera are estimated by HFS.

## This report is based on

- » **Tales from the trenches:** Interviews with buyers who have evaluated service providers and experienced their services. Some contacts were provided by service providers, and others were from interviews conducted with participants in global market research studies.
- » **Sell-side executive briefings:** Structured discussions with service providers regarding their vision, strategy, capability, and examples of innovation and execution.
- » **Publicly available information:** Thought leadership, investor analyst materials, website information, presentations given by senior executives, industry events, etc.

# Software Product Engineering Services Blueprint scoring percentage breakdown

**Execution**

**100%**

Quality of customers and customer relationships

20%

Solution and delivery capabilities

40%

Geographic spread and scale

20%

Applicability to different segments

20%

# Execution criteria definitions

## Execution

How well does the service provider execute on its contractual agreement? How well does the provider manage the client-provider relationship?

### Quality of customers and customer relationships

How engaged is the executive and management team in defining and managing the delivery of business services? What is the scale of client engagements? How many software product engineering customers have an ACV of \$5 million or more? What is the quality of service providers' clients? How many of the top 10 ISVs, top 100 ISVs, and top 25 internet companies are convinced of the service providers' capabilities? How strong are the customer relationships? How many clients' relationships are five years old or older?

### Solution and delivery capabilities

What are the clients' and the market's overall impression of the quality of service across the value chain from the service provider? How deep and wide is software product engineering solution expertise across value chain and customer segments? Is the delivery capability widespread across the value chain? How are delivery capabilities developed and nurtured?

### Geographic spread and scale

How does this service provider use a global delivery footprint to meet clients' needs? Do service providers have the scale to make investments in delivery? How do their spread and scale compare with the industry?

### Applicability to different segments

How deep is the expertise in delivering solutions across different types of segments, such as vertical ISVs, technology ISVs, enterprise platforms, and internet companies? How are the solutions applicable to different geographies? How are the software product engineering solutions applicable to different customer sizes? How does their segment's mix compare with that of the industry?

# Software Product Engineering Services Blueprint scoring percentage breakdown

## Innovation

100%

Strategy, investments, and ecosystem robustness

25%

Technology, tools, patents, and IP business

25%

Code reuse and automation

15%

Pricing and business outcomes measurement

15%

Emerging areas (DevOps, AI, SaaS, cloud, etc.)

20%

# Innovation criteria definitions

## Innovation

**How well does the service provider innovate its offering(s) in response to market demand, client requirements, and its own vision for how the software product engineering services market will evolve?**

Strategy, investments, and ecosystem robustness

What is the service provider's vision for the evolution of software product engineering services? Is there a clear strategy for delivering software product engineering services, and are there identifiable investments in place to realize this strategy today? Do customers rate the services as innovative? Are there examples of innovation in engagements shared by customers and service providers? How is the service provider leveraging the external ecosystem? Is the service provider leveraging thought leadership to educate and influence customers and stakeholders?

Technology, tools, patents, and IP business

What is the role of tools and platforms in the service provider's offering strategy? Are the selected platforms developed in-house, or are they provided by third parties? Is there a demonstrable intent to maintain and enhance the in-house platforms? What is the role of patents and IP solutions in the service provider's offerings?

Code reuse and automation

What is the "code reuse" strategy of the service provider? Does the service provider implement its strategies at the project level, at the customer level, or at the company level? What are the automation strategies and offerings across the software product engineering value chain?

Pricing and business outcomes measurement

Does the service provider have a clear understanding of what business outcomes exist for software product customers and how the service provider will deliver these business outcomes using collaborative engagements? How flexible and competitive is the service provider when determining the pricing of contracts? How does the service provider's pricing mix compare with that of the industry?

Emerging areas

How is the service provider looking at emerging areas? Does it have plans to leverage these emerging areas and integrate them into its solutions? Examples include DevOps, agile, SaaS, cloud, AI, IoT, API, and containers.

# Key market dynamics

# Key trends driving the software product engineering services market (1)

- » **Focus on strategic outsourcing:** Customers are adopting a lean approach to run their businesses. In their portfolios, they are segregating their core and non-core products and functions. Non-core functions and products are outsourced for cost savings and operational efficiency, with a long-term and collaborative engagement with the service providers. Service providers are engaging with the clients for joint investment and go-to-market initiatives in this area.
- » **Consulting gains new importance:** Customers are asking for strategic consulting for product roadmaps to achieve the transition from legacy technologies to adoption of new, cutting-edge technologies. This transition demands a product engineering mindset that includes expertise in organization-wide processes and cultural and operational changes. Service providers are increasingly engaging with their clients as a strategic advisor and implementation partner. In some cases, service providers are partnering with big consulting firms to fill the consulting gap.
- » **New business model:** Customers are trying to reduce cost overhead and engage in unique commercial models with their service providers. As the SaaS model is cannibalizing customers' traditional product license and revenue channels, they are more becoming more inclined toward nonlinear pricing models. Service providers have also mentioned several examples of outcome-based and risk-reward pricing models for both vertical and enterprise ISVs.
- » **Consolidation of outsourcing partners:** As customers optimize their product portfolio by segregating core and complementary products, they are also consolidating their outsourcing partners to build strategic relationships and sharing their vision to help align growth initiatives. In some cases, clients are outsourcing in bits and pieces, requiring very specific capabilities with constant change in the specifications and project requirements, thus a long-term, 360-degree relationship is essential.
- » **Exploring enterprise segment:** Traditional software product engineering service providers are focused on the ISV segment. Now enterprise and internet companies are building their own platforms. This can be a target segment for the service providers as these companies will be interested to outsource some of the project works.

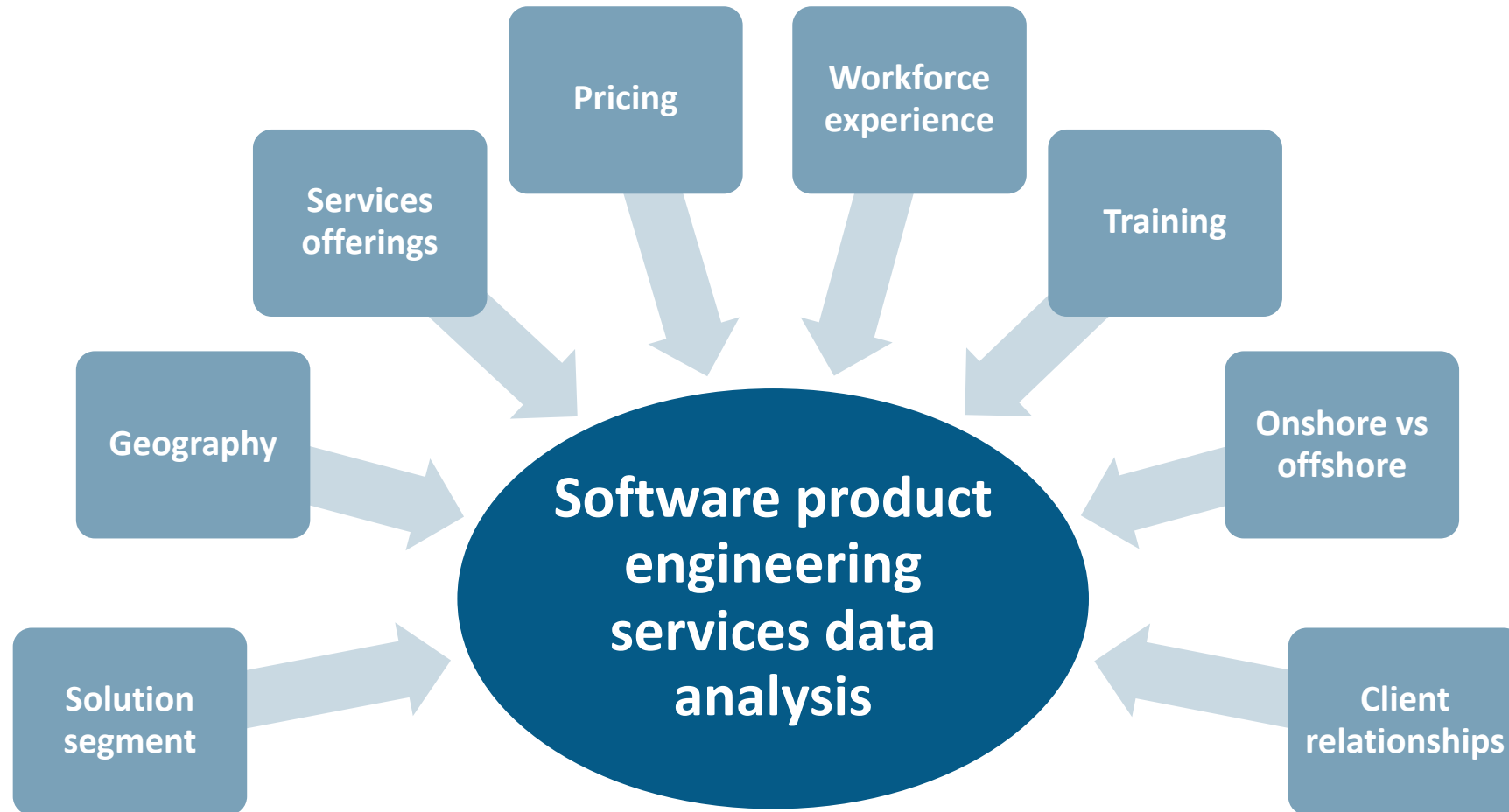


# Key trends driving the software product engineering services market (2)

- » **Exploring new geographies:** Clients seek to maximize the value of their investment by increasing the penetration of the existing product portfolio in new geographies and adjacent markets. This requires product re-engineering, localization, regulatory compliance (like GDPR), value engineering, and other product enhancing services. We have observed several examples of this type of engagement in which service providers are involved from the initial stage to the post deployment support phase.
- » **Increasing influence of digital technologies:** The technology change agents in software product engineering include automation, IoT, cloud, and artificial intelligence. These technologies are instrumental in the overall customer journey, competitive advantage, user experience, and other business outcomes. Service providers need to develop strong expertise in these emerging areas.
- » **Co-investment model is becoming popular:** Using co-investment-led business models to partner for developing next-generation products is becoming popular in the software product engineering space. We are observing an increasing number of initiatives and participation by service providers through this investment model. This partial monetization enables customers to share the risk and reduce up front investment.
- » **Domain knowledge is the new differentiation:** Deep domain knowledge is the differentiating factor in software product engineering services. This can be related to “Industry context”, experience in enterprise tools and platform development. With the advent of cloud computing, micro services, and mobility, deep knowledge in business processes can be a unique differentiator—not only from the business point of view but also from technology perspective. Vertical knowledge is also a critical piece of the puzzle in addressing the vertical ISV segment.
- » **IP sustenance deals:** ISVs are partnering with service providers in IP sustenance deals in which service providers commit some upfront payment on assured business, take full ownership of IP, and invest on modernization and enhancements. These types of deals have the potential to grow in a revenue sharing model.

# Market data analysis

# Market data analysis\* of software product engineering services across eight dimensions



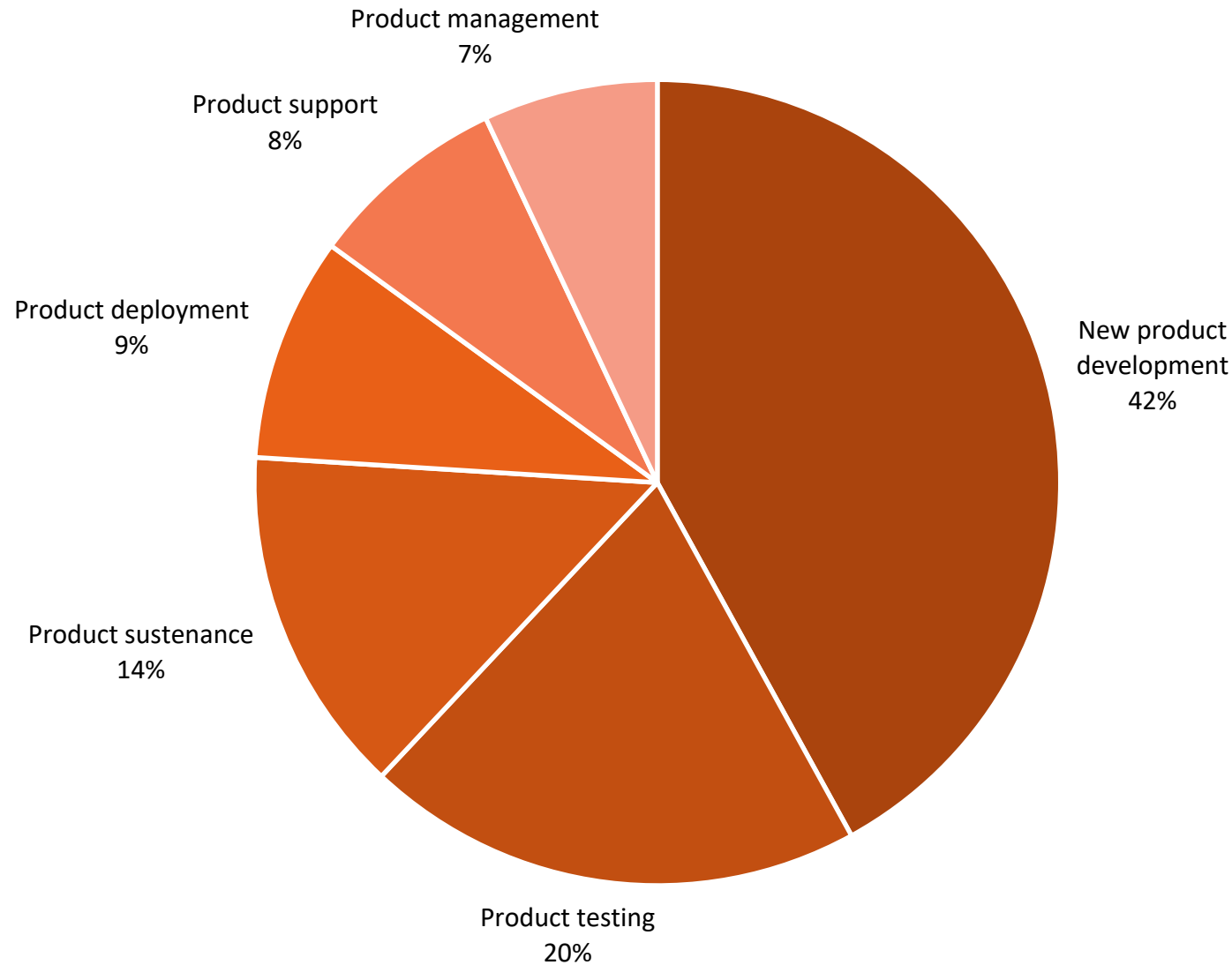
\* Based on *sample: service providers = 22*

# Current services revenue spread in software product engineering services across the value chain

## Software product engineering services segmentation

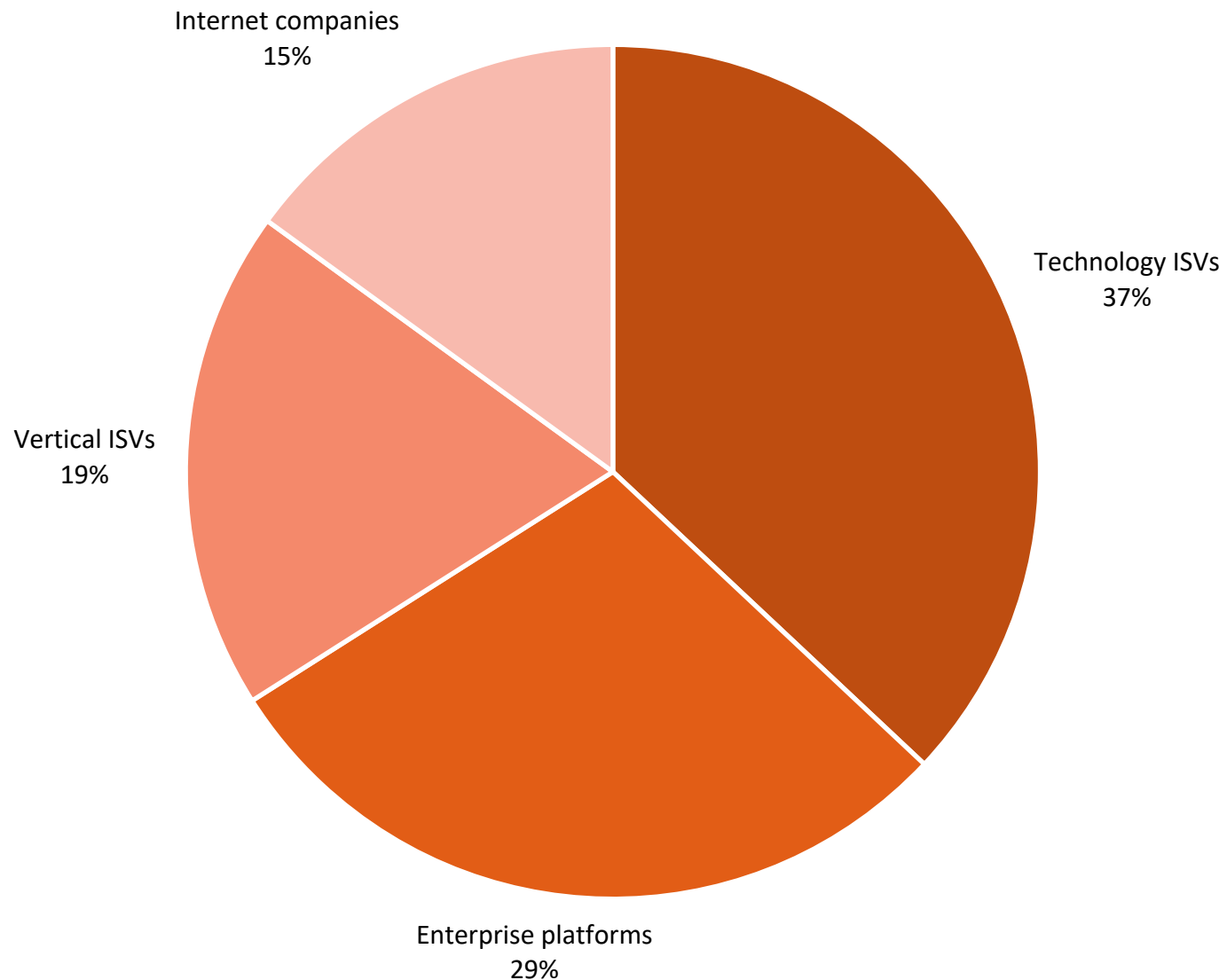
New product development and product testing are the leading services, accounting for more than 60% of revenue, followed by product sustenance services.

According to service providers, the shares of the product sustenance and product support are increasing in the software product engineering service mix.



Source: HFS Research, 2018; sample: service providers = 22

# Software product engineering services revenue by different types of segments



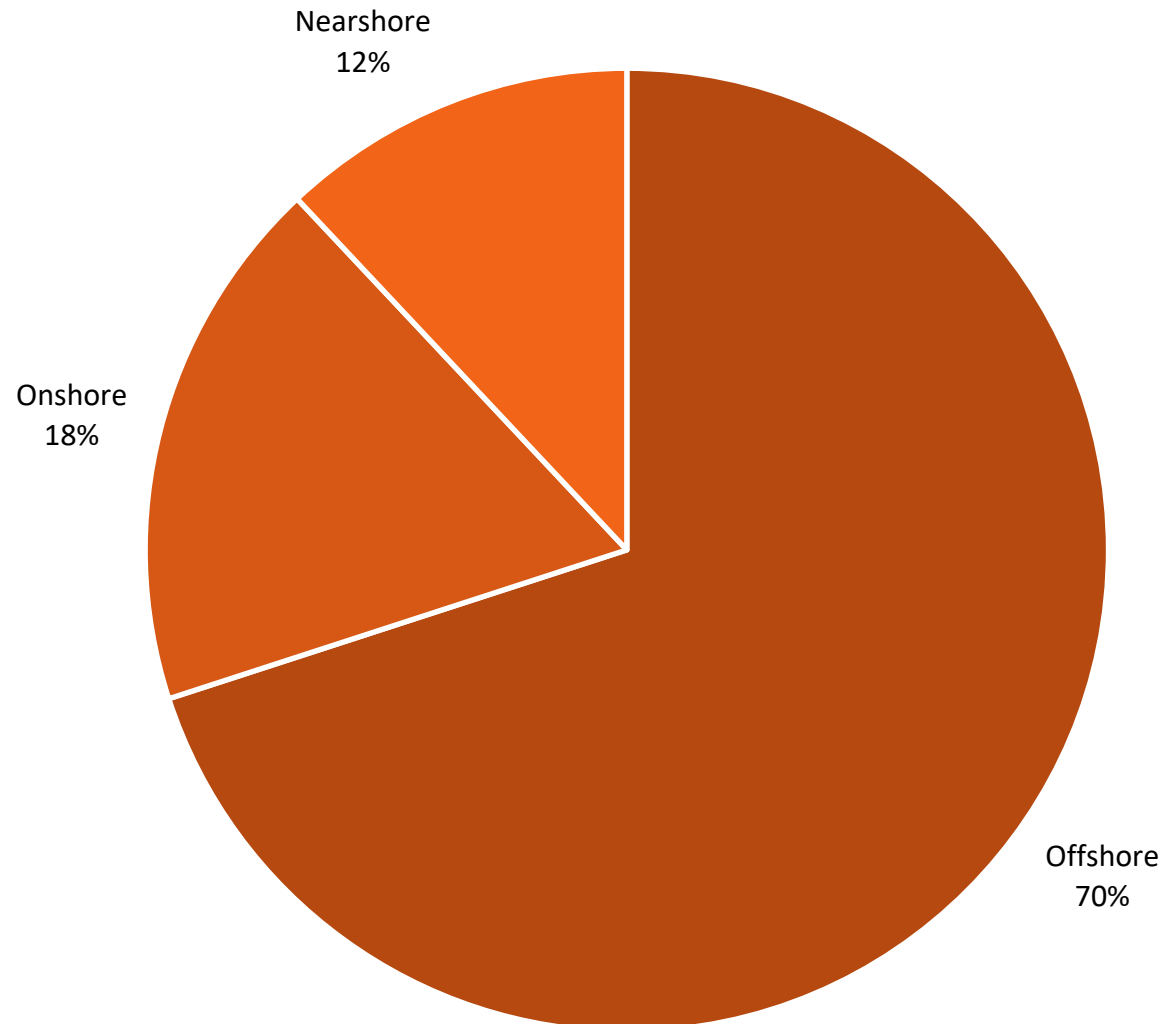
## Software product engineering services segmentation

ISVs (including technology and vertical) are the leading customer segment, with more than 55% of the total revenue.

According to service providers, the share of internet companies and enterprise platforms is increasing in the software product engineering service mix.

Source: HFS Research, 2018; sample: service providers = 22

# Software product engineering services headcount breakdown by onshore, nearshore, and offshore



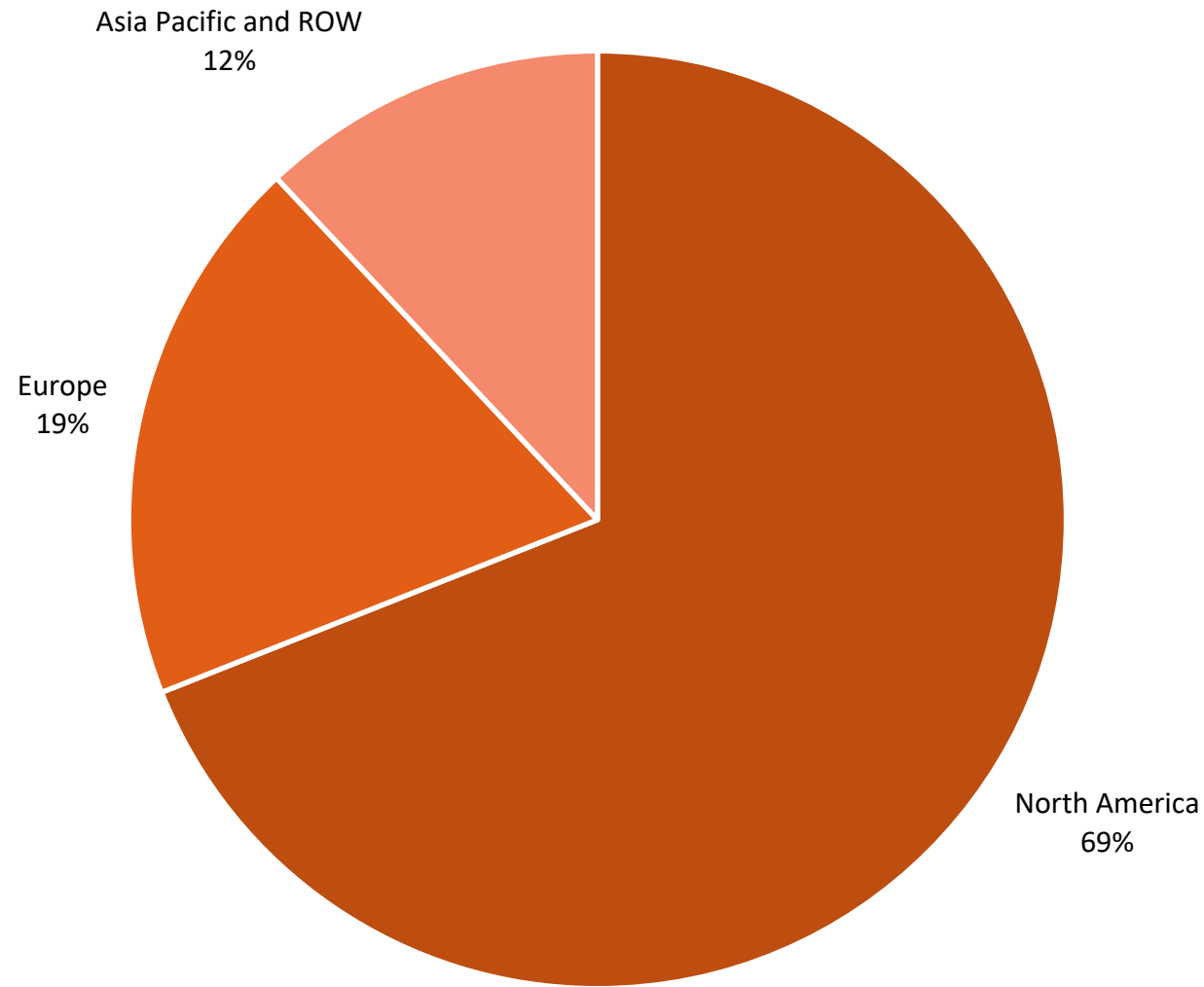
## Software product engineering services headcount breakdown by onshore, nearshore, and offshore

About 88% of the software product engineering services headcount is either offshore or onshore. Most of the onshore resources are based in North America; the majority of the nearshore resources are located in Europe.

We have observed that few service providers have strong delivery presence in Latin American countries.

Source: HFS Research, 2018; sample: service providers = 22

# Software product engineering services revenue breakdown by geography



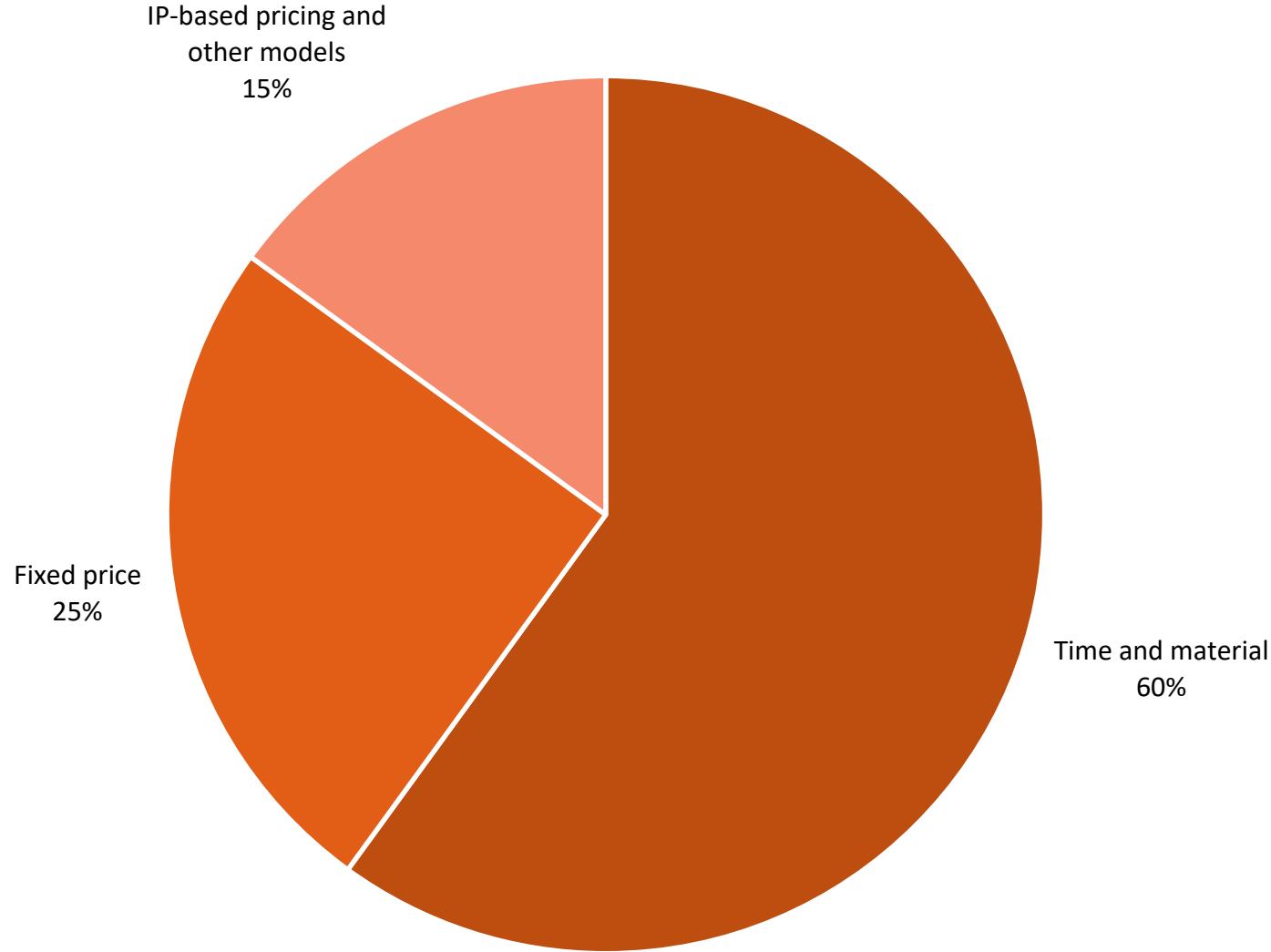
## Software product engineering services geographic segmentation

North America is the largest market for software product engineering services, followed by Europe.

According to service providers, Europe and APAC have higher growth potential because of growth in enterprise and internet companies segments.

Source: HFS Research, 2018; sample: service providers = 22

# Software product engineering services revenue breakdown by pricing models



## Pricing for software product engineering services

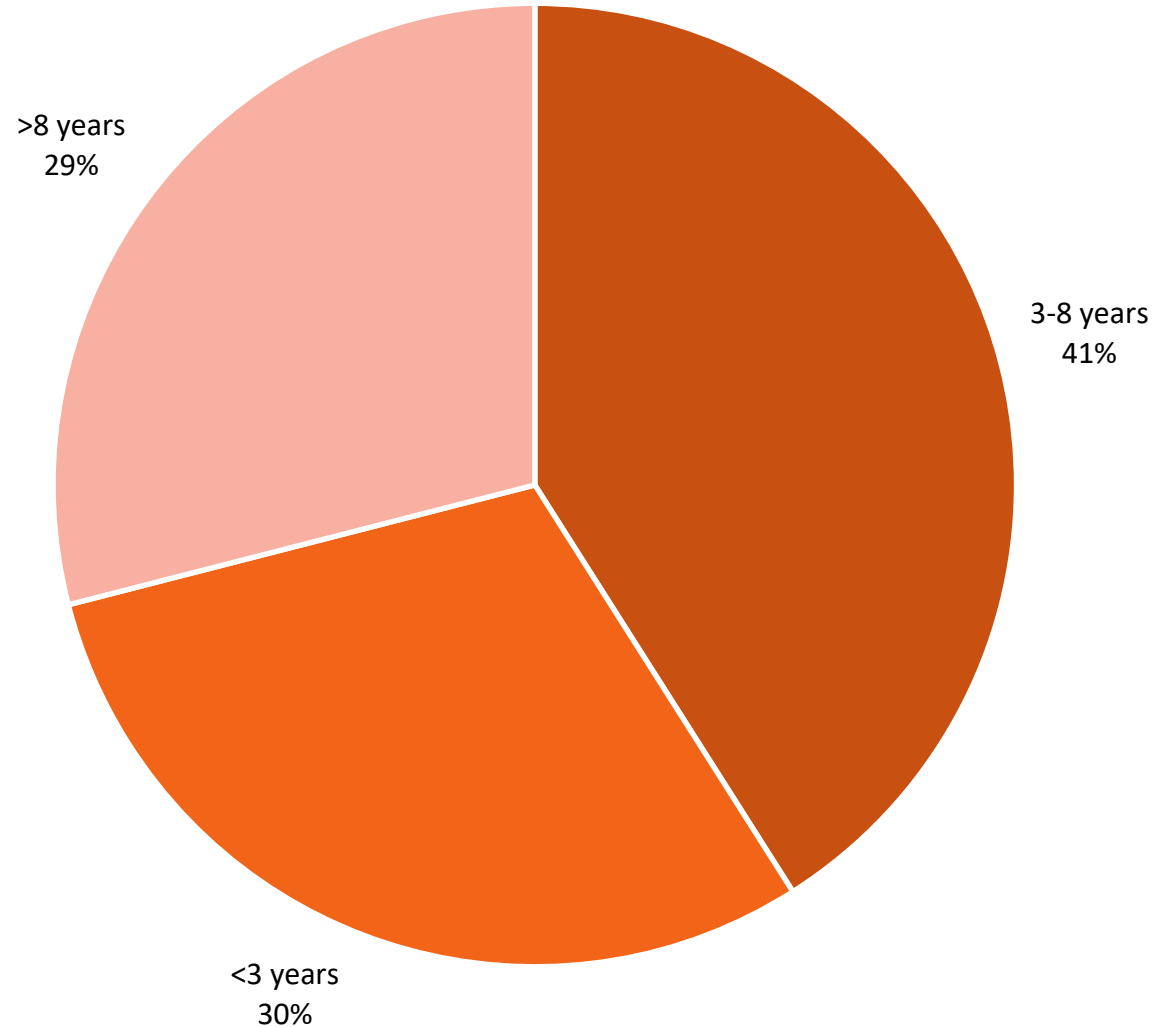
The pricing in software product engineering services is predominantly based on time and material (T&M).

HFS' discussions with buyers and service providers indicated a growing demand for more fixed and non-linear pricing.

Source: HFS Research, 2018; sample: service providers = 22



# Current workforce experience split in software product engineering services



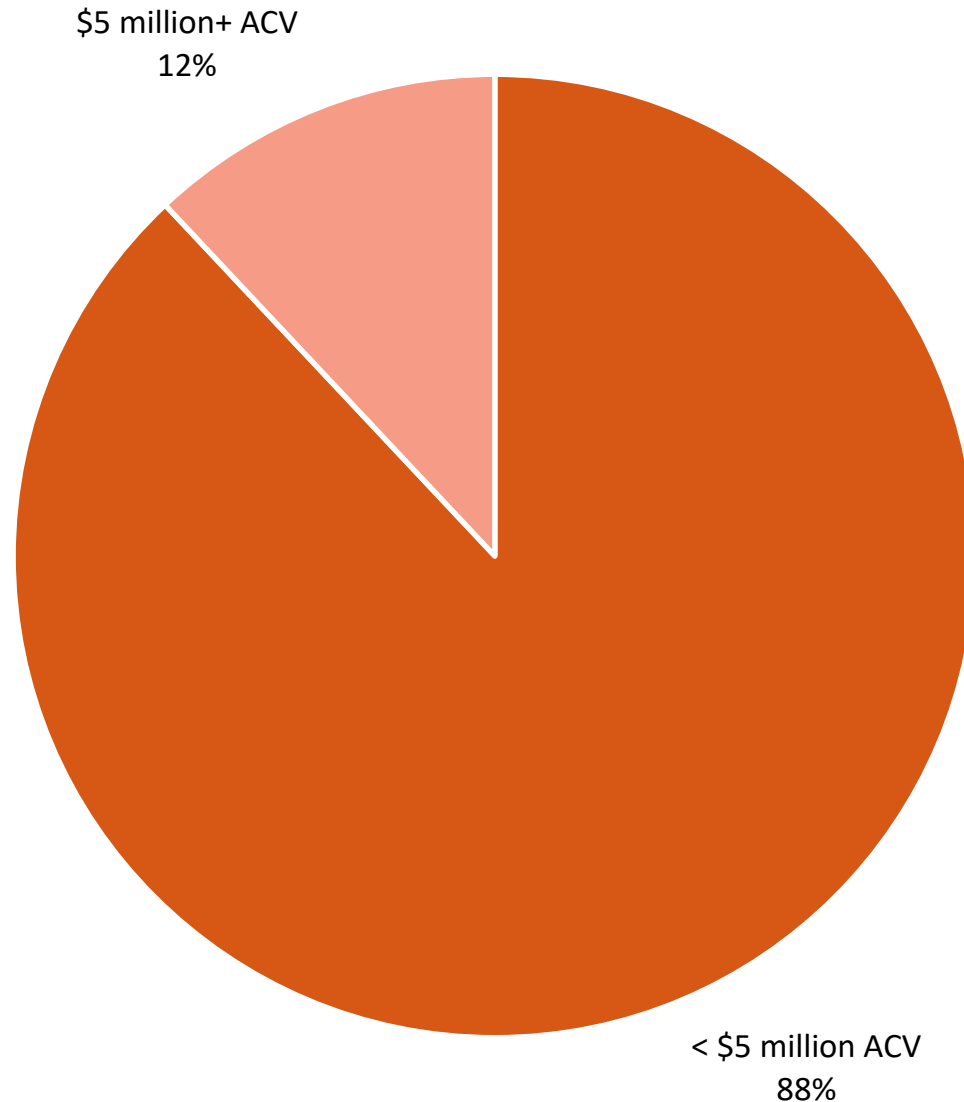
## Workforce experience split in software product engineering services

The overall workforce mix is tilted toward senior professionals.

As more emerging technologies are being used, the workforce mix of professionals with three to eight years of experience is becoming heavier. The percentage of professionals with more than eight years of experience may not increase, but the distribution will shift toward DevOps and agile related assignments.

Source: HFS Research, 2018; sample: service providers = 22

# Client relationships: Percentage of clients with \$5 million+ ACV



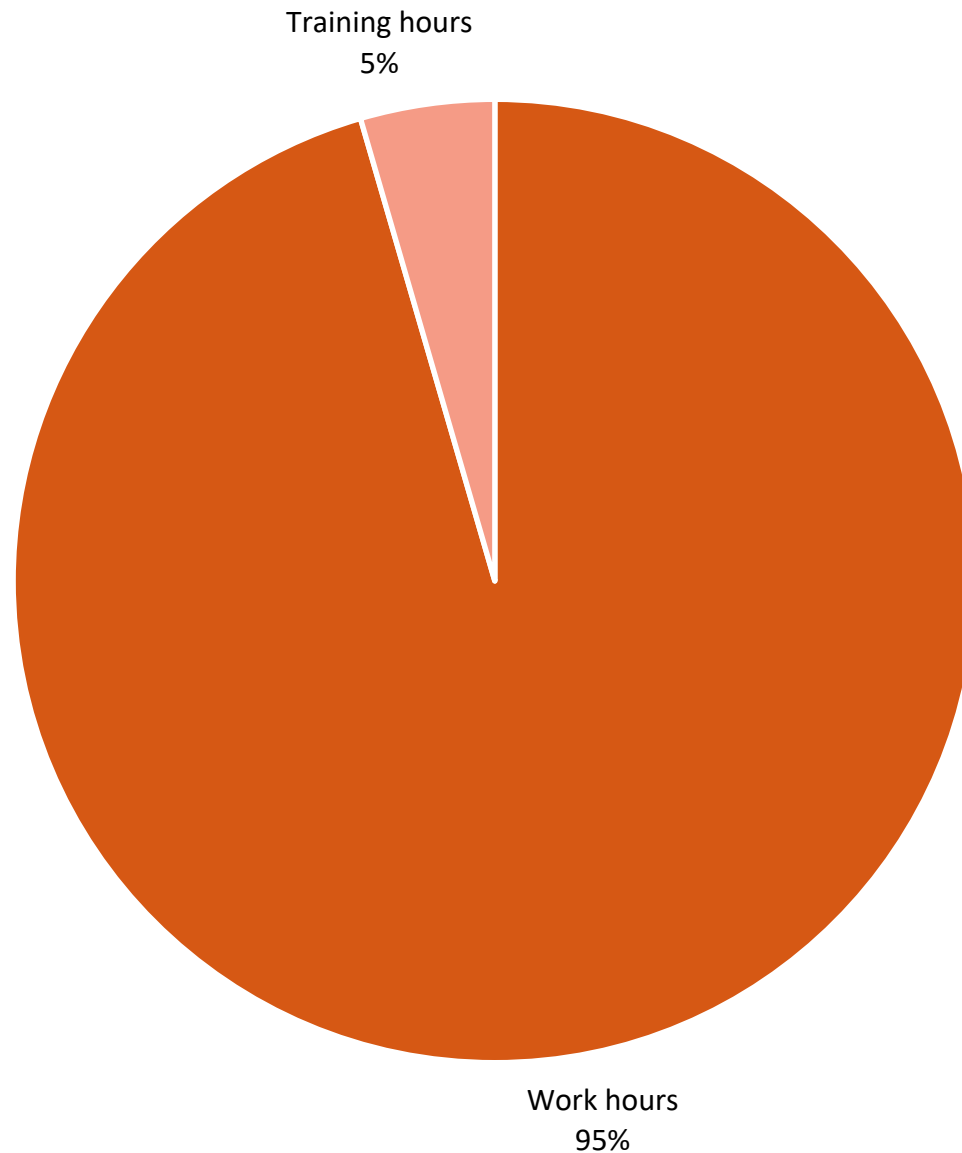
## Clients with \$5 million+ ACV

On average, 9% of software product engineering service provider client accounts have more than \$5 million in ACV.

There is large variation (0% to 80%) among service providers in their percentage of clients with \$5 million+ ACV.

Source: HFS Research, 2018; sample: service providers = 22

# Investment in training hours per FTE



Source: HFS Research, 2018; sample: service providers = 22

## Training hours per FTE



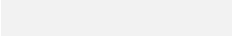
Software product engineering service providers spend an average of 90 hours per FTE each year on software product engineering related training. Assuming an average of 2,000 total work hours per year per FTE, this is about 5% of work hours.

# Service provider grid and profiles

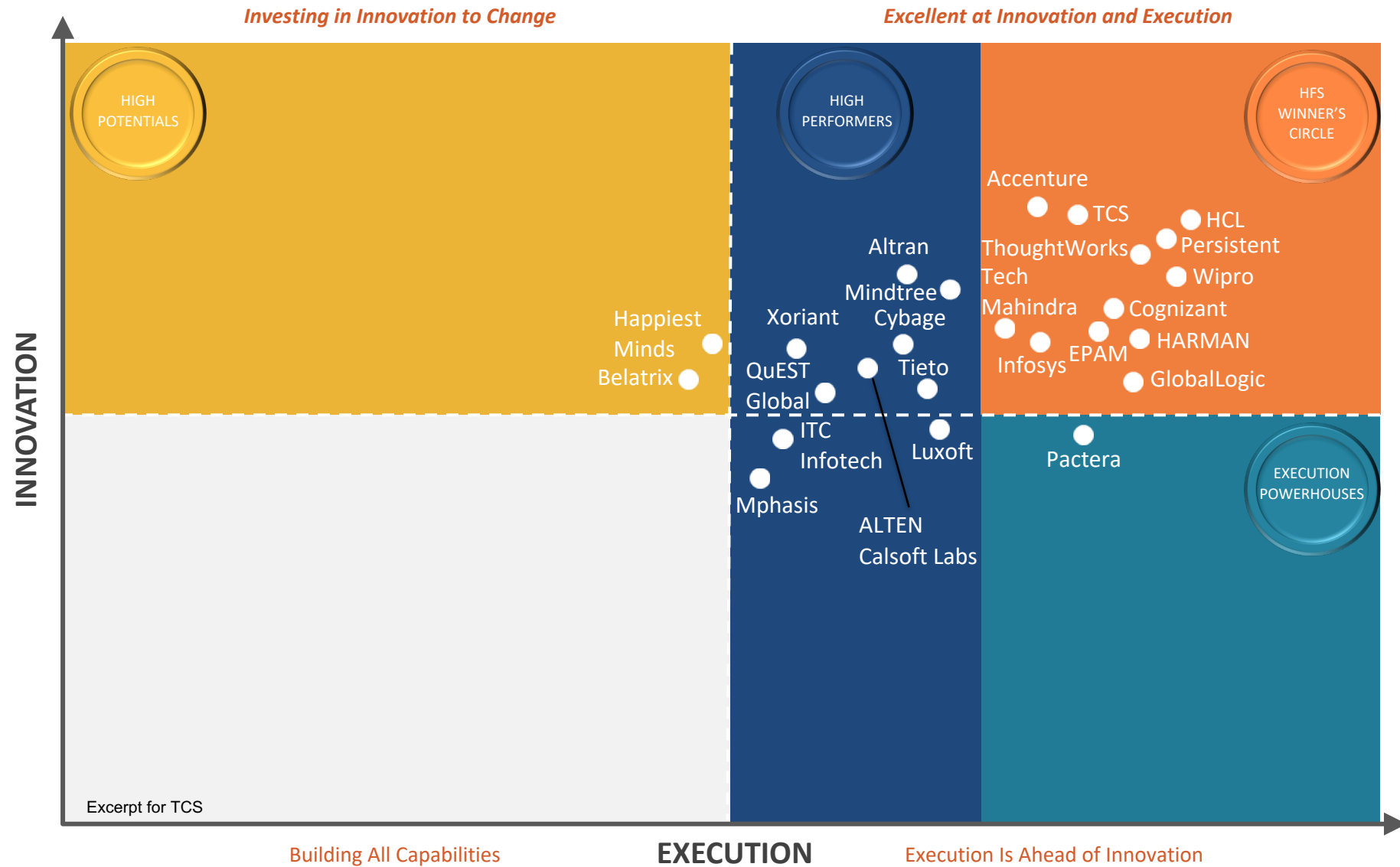
# Guide to HFS Blueprint Grid

To distinguish service providers that show competitive differentiation across innovation and execution, HFS awards these providers the “HFS Winner’s Circle” designation.

Category	Execution	Innovation
<p><b>HFS Winner’s Circle</b> show excellence recognized by clients in the Eight Ideals in execution and innovation</p>	<p>Collaborative relationships with clients, services executed with a combination of talent and technology as appropriate, and flexible arrangements.</p>	<p>Articulate vision and a “new way of thinking,” have recognizable investments in future capabilities, strong client feedback, and are driving new insights and models.</p>
<p><b>High Performers</b> demonstrate strong capabilities but lack an innovative vision or momentum in execution of the vision</p>	<p>Execute some of the following areas with excellence: worthwhile relationships with clients, services executed with “green lights,” and flexibility when meeting clients’ needs.</p>	<p>Typically, describe a vision and plans to invest in future capabilities and partnerships for As-a-Service, and illustrate an ability to leverage digital technologies or develop new insights with clients.</p>
<p><b>High Potentials</b> demonstrate vision and strategy but have yet to gain momentum in execution of it</p>	<p>Early results and proof points from examples in new service areas or innovative service models, but lack scale, broad impact, and momentum in the capability under review.</p>	<p>Well-plotted strategy and thought leadership, showcased use of newer technologies or roadmap, and talent development plans.</p>
<p><b>Execution Powerhouses</b> demonstrate solid, reliable execution but have yet to show significant innovation or vision</p>	<p>Evidence of operational excellence; however, still more of a directive engagement between a service provider and its clients.</p>	<p>Less evident vision and investment in future-oriented capability, such as skills development, “intelligent operations,” or digital technologies.</p>

-  Strong capabilities or mature offering—presence of offerings in the majority of subcategories, > \$ 10 million revenue
-  Developing capabilities, \$1–\$10 million revenue
-  Yet to develop or minimal, < \$1 million revenue

# HFS Blueprint Grid: Software Product Engineering Services 2018



A strong software product engineering service provider with compelling vision, innovation mindset, and good delivery reputation

Blueprint Leading Highlights	Strengths		Challenges	
<ul style="list-style-type: none"> <li>Vision</li> <li>Account management</li> <li>Delivery capability</li> <li>Patent portfolio</li> <li>Geographic presence</li> </ul>	<ul style="list-style-type: none"> <li><b>Vision:</b> TCS aspires to be the prime partner of choice for TCS customers for all existing and new product initiatives by providing services across the full product life cycle. TCS is leveraging its Business 4.0 framework, with digital technology advancements and location-independent agile delivery to aid it in transforming its customers products and platforms. It is also utilizing technical capabilities, for example intelligence (AI + Analytics), agile, automation, and the cloud to grow this business. It has trained over 200,000 associates on digital technologies and agile methodologies to cater to its clients.</li> <li><b>Patents and innovation credentials:</b> TCS has strong innovation credentials in the software product engineering space. It has one of the highest number of patents among the service providers evaluated for this Blueprint. TCS has rigorous patent management and IP development processes in place under the Components Engineering Group.</li> <li><b>Quality account management:</b> Clients give high marks to TCS' account managers, who are proactive, structured, and build a good relationships over the engagement period, ensuring seamless operations. In addition, it has one of the highest FTE/client ratios, which depicts the depth of TCS' client engagements.</li> <li><b>Building good delivery reputation:</b> TCS is well known as a service provider that can deliver on its promises. Reference clients have also pointed out that they are satisfied with TCS' performance delivering software product engineering services on time and within budget.</li> <li><b>Geographic delivery mix:</b> TCS has a strong geographic spread with 25+ software product engineering delivery centers covering all major regions, including North America, Europe, and Asia-Pacific. In addition, it has one of the highest percentages of resources in onshore and nearshore locations.</li> </ul>		<ul style="list-style-type: none"> <li><b>Marquee ISV client accounts:</b> Though TCS has a strong presence in the top 10 ISV client segment, it lags behind some of its Winner's Circle peers in penetration in the top 100 ISVs and top 25 internet companies. This represents an opportunity for TCS to strengthen its client portfolio in software product engineering.</li> <li><b>Increasing share of internet customer segment:</b> TCS has relatively less business from the internet customer segment in its services revenue mix. During discussions with TCS team, we came to know that it already has engagements with internet companies in other areas and is trying to collaborate with them in software product engineering space.</li> <li><b>Presence in small sized customer segment:</b> TCS' client mix is tilted toward large and medium sized clients and has relatively less presence in the customer segment that has less than \$100 million in revenue. This can be a target area for TCS for future growth.</li> </ul>	
Value Chain				
NPD				
Sustenance				
Testing				
Deployment				
Support				
Product Management				
Customer Segments	Relevant Acquisitions/Partnerships	Key Clients	Global Operations Centers	Proprietary Technologies/Platforms
Vertical ISVs	<b>Acquisitions:</b> <ul style="list-style-type: none"> <li>Computational Research Laboratories (2012)</li> <li>Mitsubishi (JV) (2012)</li> </ul>	<b>Top 10 ISV companies as clients:</b> 8 <b>Top 100 ISV companies as clients:</b> 24 <b>Top 25 internet companies as clients:</b> N/A	<b>Software product engineering services headcount (in-scope):</b> > 5,000	<b>Total patents (filed + granted):</b> > 250
Technology ISVs	<b>Partnerships:</b> <ul style="list-style-type: none"> <li>Symantec, GE, NetApp, HP, EMC, Xerox, Microsoft, VMware, Nutanix, Cisco, Citrix, SAP, CA, Informatica, Intel, Redhat, Juniper, AWS, Appdynamics (acquired by Cisco), Cloudera, Perfecto, Splunk</li> </ul>	<b>Clients (100+) include:</b> <ul style="list-style-type: none"> <li>European telecom equipment vendor</li> <li>European wireless equipment vendor</li> <li>Leading hybrid cloud data services and storage company</li> <li>Leading software product development company</li> <li>North American enterprise equipment vendor</li> <li>North American semiconductor manufacturer</li> </ul>	<b>Locations:</b> 25+ major software product engineering services delivery center locations including: <ul style="list-style-type: none"> <li>North America: Canada, US</li> <li>Europe: Finland, Germany, Hungary, Ireland, UK</li> <li>APAC: China, India, Japan</li> </ul>	<b>Key IP solution:</b> <ul style="list-style-type: none"> <li><i>TCS Mastercraft:</i> Suite of intelligent automation products for application development, testing, and delivery</li> <li><i>Ignio:</i> Cognitive automation solution</li> <li>Engineering environment as a service</li> <li>Microservices development and deployment platform</li> <li>AI-based radio network optimization</li> </ul>
Enterprise Platforms				
Internet Companies				

## Execution highlights

- » **ThoughtWorks has a high onshore presence:** ThoughtWorks has one of the highest onshore ratios among the service providers evaluated for this Blueprint.
- » **EPAM has a large number of long term contracts:** The percentage of EPAM's business from long-term contracts is one of the highest among the service providers evaluated for this Blueprint.
- » **Wipro has a strong client portfolio:** Wipro has one of the highest number of clients among the service providers included for this Blueprint.
- » **TCS thrives on depth of client engagements:** TCS' revenue/client ratio is one of the highest among service providers evaluated for this Blueprint, which reflects positively on the depth and breadth of its software product engineering engagements.
- » **Persistent has a highly educated workforce:** Persistent has one of the highest percentages of postgraduates and PhDs in its workforce among the service providers evaluated for this Blueprint.
- » **HCL leverages its client quality:** HCL has one of the highest number of clients in the top 10 ISVs, top 100 ISVs, and the top 25 internet companies, which demonstrates its client quality.
- » **Infosys has expertise across the value chain:** Infosys has strong service offerings to support complete software product engineering with end-to-end capabilities.

## Innovation highlights

- » **HCL leads in patents and innovation credentials:** HCL has strong innovation credentials in the software product engineering space. It has one of the highest number of patents among the service providers evaluated for this Blueprint.
- » **Altran leverages acquisitions and partnerships:** Altran has acquired two service providers including a billion dollar acquisition, and it has partnerships with promising startups, which has created a robust ecosystem.
- » **Accenture invests in innovation and lab infrastructure:** Accenture has invested in labs (applied R&D, prototyping new concepts), studios (design and creation of digital services), and innovation centers (demonstrate and scale industry solutions).
- » **Cognizant delivers on business outcomes:** Cognizant delivers business outcomes through PODs, a team of 4-6 team members, that implement good programming practices and assure high-quality deliverables.
- » **HARMAN focuses on emerging areas:** HARMAN has strong expertise in DevOps and agile areas including a balanced solutions portfolio.
- » **ThoughtWorks focuses on thought leadership:** ThoughtWorks employees have authored 85+ books on software product engineering
- » **Persistent offers nonlinear pricing models:** Persistent has shown a variety of case studies with nonlinear commercial models, including IP and gainshare, risk, and reward pricing models. It works with 25+ customers in IP or revenue sharing deals.



# Market direction and recommendations

# Service provider selection

**Why this service provider?** The top reasons that clients offered for selecting their service provider are:

1. Software engineering service offerings across the value chain
2. Expertise in emerging areas including analytics, IoT, DevOps, agile, and the cloud
3. Client management and delivery capability
4. Historical relationship
5. Recommendation from references and similar experience in the industry
6. Solution approach demonstrated during RFP process
7. Pricing flexibility and competitiveness
8. In-house tools, templates, and accelerators
9. Ease of resource onboarding and resource capability augmentation
10. Geographical reach and client proximity
11. Risk appetite to take IP ownerships

# Recommendations: Enterprise buyers (1)

- » **Select service providers that can support the entire value chain:** Most of participants for this Blueprint were selected for their ability to support the end-to-end software product engineering value chain activities. Every software product engineering service provider covered is capable of meeting buyers' broad needs, although capabilities differ significantly across the value chain and different customer segments. Therefore, buyers are advised to match carefully the service providers' skills and take analysis to the appropriate level before short listing a service provider for an RFP.
- » **Leverage the service provider's in-house tools and solutions:** The service providers included for this Blueprint have a good portfolio of software product engineering solutions. Buyers need to be very precise about their particular technology need and this can be one of the selection criteria while evaluating them in the RFP process and leverage the benefit in project engagements. Some client references pointed out that the end-to-end agile and DevOps services of service providers were very useful for continuous delivery.
- » **Leverage commercial models for the engagements:** Buyers should try nonlinear pricing models, such as outcome-based or risk-reward pricing to get the maximum out of the service providers, particularly for the non-core product portfolio. Fixed price and time and material (T&M) are already the most popular, and outcome-based models have started showing up more frequently in the service providers' pricing mix as well. We recommend buyers engage with service providers for end-to-end business processes, i.e., from the design phase to the product sustenance phase, enabling service providers to plan and invest according to buyers' needs. In this way, buyers can get the best out of their service providers.

## Recommendations: Enterprise buyers (2)

- » **Develop only a few strategic service providers:** Typically, buyers work with several service providers for specific technology needs. Due to cost pressure, quick product launch, and competitive landscape, there is a need for alignment and more collaboration between customers and service providers for growth initiatives and future roadmap. This demands a strategic partnership model and consolidating the broad base of traditional vendors.
- » **Evaluate capabilities in localization:** Buyers are expanding their market reach by launching new products more frequently across geographies. Buyers need to select the service provider that has understanding of the localization and the capability to do value engineering and compliance management for the market.
- » **Keep an eye on project management:** Buyers have confirmed that most of its engagements are a part of broad digital transformation agenda implemented across the product portfolio. There is a lot of uncertainty about the requirement, leading to delay in delivery, late resource onboarding, and other factors that have impacted the product launch timeline. Buyers need to be more proactive about tracking deliverable progress.
- » **Expertise in emerging areas:** Buyers need to engage with service providers to define roadmaps for how machine learning, analytics, cloud computing, etc. can be leveraged for future product development or existing product enhancement. These emerging areas demand a new set of capabilities, so buyers need to select service providers that can support these advanced technologies, co-work with an internal R&D team, and develop an advanced product portfolio by leveraging both internal and external capabilities.

## Recommendations: Service providers (1)

- » **Develop expertise in the emerging areas:** The major software product engineering influencing technologies are artificial intelligence, cloud computing, IoT, analytics etc. Based on our discussions with the buyers and our understanding of present software product engineering landscape, the service providers need to build capabilities including a strong solutions portfolio in these emerging technology areas.
- » **Developing a robust partnership ecosystem:** The service providers have partnerships with diverse technology companies for different technology areas. As the digital technologies become differentiators in the software product engineering space, service providers need to leverage their partnerships and collaborate more with their own digital team to develop joint solutions, collaborative pricing models, and developing PoCs specific to client needs.
- » **Investment in domain knowledge:** In software product engineering services, domain-specific business process knowledge is of paramount importance. Buyers expect threshold industry knowledge and more horizontal technology expertise from service providers. Service providers need to increase their domain knowledge to improve their customer experience.
- » **Provide flexibility in services and commercials:** Buyers appreciate the flexibility of service providers in services and commercials. As software product engineering services projects are facing requirement uncertainties, stringent go-to-market timeline, and cost pressure, technology competency combined with a flexible approach to deals is one of the key factors for winning new customers for service providers.

## Recommendations: Service providers (2)

- » **Continue to invest in talent management and retention:** Talent management remains one of the biggest challenges for all software product engineering services providers. Service providers need to focus more on hiring and retaining talent. The technology landscape is changing very fast in the software product engineering space, thus upgrading knowledge is of paramount importance. Service providers can address these concerns by increasing investment in resource capability augmentation. We have observed a number of university tie-ups and association with online learning platforms by service providers.
- » **Build scale and look at acquisitions:** Overall, we have observed very high growth in software product engineering services over past few years. Scale is becoming an important factor in this space to enable service providers to make the required investments in emerging technologies, design, domain, and IP capabilities. Most of the service providers have been proactive to build scale fast inorganically by primarily vertical specific and digital technology specific acquisitions. Small-scale software product engineering service providers could be good acquisition targets to gain market and client access.
- » **Focus on mid-tier and small companies:** Most service providers are focusing on big enterprises (typically with more than \$1 billion dollar in revenue) for software product engineering services. However, many mid-tier and small companies (particularly in the range of \$100 million in revenue) are outsourcing their software product engineering work. This can be a target segment for service providers. We came across few similar engagements with development and testing services in this Blueprint.

## Recommendations: Service providers (3)

- » **Expand onshore and nearshore presence:** Many software product engineering customers are looking for service providers that can provide service delivery at a location very close to them for better execution. The implementation of DevOps and agile across the engagement also demands client proximity in few cases. Some countries in Latin America are becoming popular nearshore countries in addition to APAC and Eastern European locations.

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Tanmoy Mondal is a Senior Research Analyst at HFS Research, identifying global trends in engineering services from both industry & technology perspectives, tracking global outsourcing deals & investments including partnership agreements & R&D announcements in the sector and supporting the domain leads in secondary research, data analysis, PoV's and research writing.

Tanmoy has over 4 years of research, pre-sales and market intelligence experience in TCS, HCL and Tracxn. At his TCS and HCL role, he worked on preparing RFP responses including solution construct and commercial proposition. He was responsible for analyzing the business scenario for ERP implementation for different industry verticals and participated in several Enterprise Transformation projects across domains to optimize the IT landscape, increasing IT integration among client business verticals, improving productivity and reducing business incidents. At Tracxn, he was part of the emerging technology team that helped finding companies (start-ups) specializing in upcoming technologies (virtual/augmented reality, drone etc.) for acquisition and portfolio investments for PE and VC firms.

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