Outsourced Software Testing Is Coming of Age

Progressing from augmentation to testing-as-a-service

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SUMMARY

Catalyst

Outsourced software testing is evolving into a distinct proposition. It is progressing from a mere staff augmentation approach (or from a bundled component as part of a larger outsourcing deal) to a significant outsourcing category in its own right. Major outsourcing contracts such as Capgemini's wins with UK mobile operator Everything Everywhere and ANZ Bank are reference points for this transformation.

Against this background, testing-as-a-service should not be positioned around innovative cloud business models, but more around the notion of tools. While testing tools are increasingly offered as a software-as-a-service (SaaS) deployment, consumption or outcome-based business models have been slow to emerge in outsourcing contracts. Ovum aims to provide guidance on the future evolution of outsourced software testing and its implications for buying organizations.

Ovum view

The independent testing services market is full of contrasts. Although testing services offer high margins to providers, organizations are slow to view testing as a strategic investment that warrants the funding, centralization, and standardization akin to shared service centers. Due to a lack of perceived strategic relevance, the marketing for testing services is fairly technical, reflecting an emphasis on tools rather than managed services or comprehensive outsourcing. Notably, commentary around sourcing strategies and their implications is scarce. This is due to the outsourcing of comprehensive testing functions still being in a nascent state. Crucially, the pipeline for these comprehensive deals is growing significantly, though only a handful of providers tend to make the shortlist. Vendors are positioning managed services as a continuum of offerings, encompassing services from staff augmentation to outsourcing of specific testing functions and testing of specific products.

The outsourcing of testing services is at a similar stage of development to contact center outsourcing 10 years ago, with the emphasis on specific projects and technology rather than on outsourcing comprehensive parts of testing functions. This has a direct bearing on business models and the adoption of cloud components Organizations are moving away from fixed-price contracts and time-and-material billing toward output-based pricing. This is being accelerated by an increasing level of automation in testing that is transforming the shape of processes. However, the metrics for these contracts are largely technical and, crucially, not yet linked to business outcomes. Thus outcome-based contracts are currently aspirational, requiring a significant amount of standardization and consolidation by organizations. Against this background, testing-as-a-service (TaaS) means different things to different people. Within the context of project-focused contracts, the emphasis is on tools and consumption-based models such as SaaS. However, for comprehensive outsourcing deals, the emphasis shifts toward a service catalog approach, allowing organizations to leverage a high degree of standardization and time to market. For the provider, the key lies in leveraging cloud services as a lever for higher utilization of its testing staff. However, in current outsourcing deals, cloud components only account for a small proportion of the overall contracts. The journey toward more mature and centralized testing functions will be slow and uneven for organizations. As with the wider discourse on cloud services, TaaS will become part of a blended delivery backbone, but not the crucial lever for the higher degrees of automation of quality assurance functions that marketing hype suggests.

Key messages

- Comprehensive outsourcing engagements of testing services have been slow to come to the fore, but the pipeline indicates increasing traction.
- Vendor positioning around outsourcing is leading to blurred perceptions within managed services.
- The adoption of cloud services is still in a nascent state, with TaaS mostly discussed around testing tools rather than outsourcing.

TESTING SERVICES ARE EMERGING AS A DISTINCT OUTSOURCING PROPOSITION

Testing is evolving from a support function to significant business

In an industry driven by marketing hype, testing services have rarely been in the limelight. IT systems only tend to make headlines when their operation goes spectacularly wrong (e.g. RBS's recent service outage, which had significant negative implications for the UK bank's share price and brand equity). Such outages underline the challenges facing testing services – that is, not being deemed core to the business and facing continuous cost pressures, while safeguarding the quality of IT production.

As a consequence, the dynamics of testing services are not fully aligned with the wider IT services market, and fundamentally, the market is highly fragmented. Pure-play testing specialists such as SGS and tier-2 India-based providers such as L&T, Infotech, and Thinksoft continue to challenge the

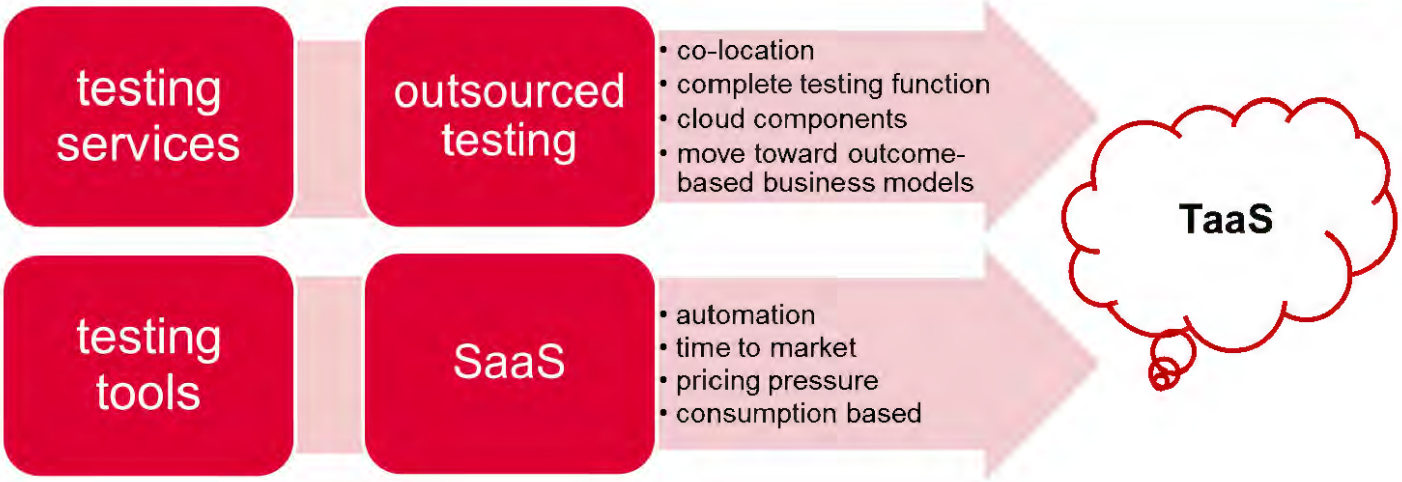
established system integrators. Notably, the India-based majors command a larger share of the testing market than they do of the overall services market. This indicates the price sensitivity of this segment, as well as demand for the specific capabilities derived from application development. CSC's acquisition of AppLabs in 2011 is a reference point for this.

Beyond the fragmentation of the market, another reference point for the relative immaturity of testing outsourcing is the fact that innovation is typically focused on testing tools rather than services. In contrast to the IT services market, the testing tools market has seen significant consolidation (e.g. MicroFocus's acquisitions of Borland and Compuware). In line with the wider adoption of cloud-based services, the introduction of open source tools, which led to the introduction of cloud-based tools, will increase the complexity in the short and medium term. In the long term, the standardization and faster time to market provided by cloud tools can help to further automate the testing stack.

Despite being perceived as non-core and price sensitive, the outsourcing of complete (or significant parts of) testing functions to a third party is still a notable exception. One of the reasons for this is the ongoing level of manual testing. A 2011 global survey conducted by Sogeti found that 59% of interviewed companies conduct between 11% and 50% of their tests manually, while only 23% use automated solutions for over half of their tests. Therefore, it is not surprising that Sogeti found that the preferred way of outsourcing continues to be co-location (27%), followed by nearshore locations within the company's country or continent (24%). Most of these projects include out-tasking or managed services, rather than the outsourcing of assets and people. Another reference point for the slow centralization and standardization of testing services at many organizations is that testing centers of excellence (TCoEs) are only gradually being built. According to Sogeti, only 6% of companies globally have developed quality assurance into a fully functional TCoE. This is in sharp contrast to the common use of shared service centers for horizontal business processes such as HR or F&A.

The lines between staff augmentation and discrete projects for specific testing activities are blurred. Figure 1 highlights the concept of TaaS as an innovative yet complex form of service delivery that has different connotations depending on whether it is discussed at the level of testing tools or at the level of testing services.

Figure 1: Different dynamics of testing tools and testing services

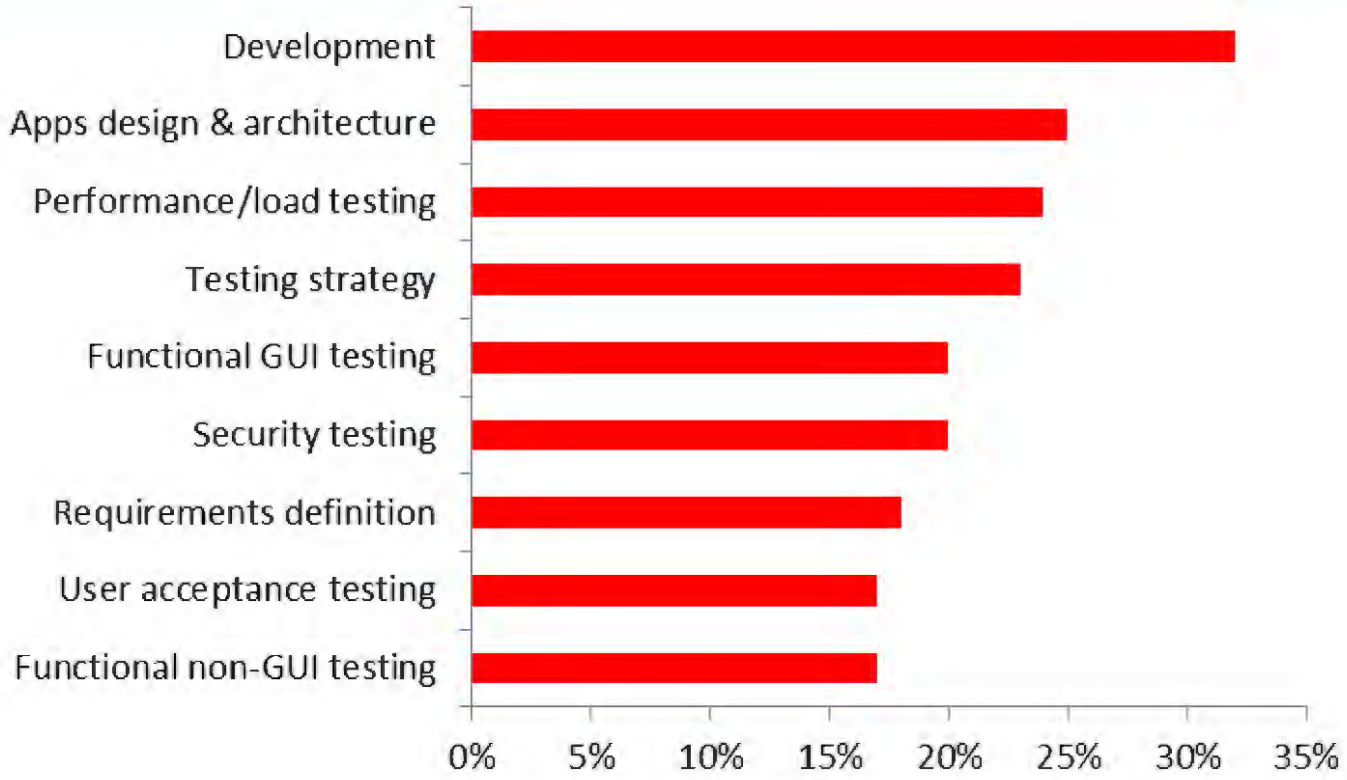


Source: Ovum

The perceived overlap applies both for tools and managed services as well as SaaS and outsourcing.

Despite this blurring, the Sogeti survey offers more specific data points as to what elements of testing are being considered for outsourcing. Figure 2 highlights the application development value chain and which activities the respondents' organizations assigned to third-party providers:

Figure 2: Type of activities assigned to resources outsourced or under contract



Source: Sogeti

When discussing the evolution of testing toward cloud-enabled delivery, the distinction between the adoption of testing tools (such as Soasta or iTKO) and complex testing outsourcing arrangements becomes blurred. This is by no means just confined to the testing space. We have seen a comparable development in other outsourcing segments such as BPO (see *The Evolution of Business Process Outsourcing: from Platform BPO to BPaaS*). The marketing of testing services is struggling with two key issues. First, the general hype around cloud services is a mixture of aspirational statements and over-simplified arguments, especially around potential cost savings and ease of use. And second, the marketing of testing services is very technical. These issues suggest that the adoption of testing as a complex and discrete outsourcing offering is not yet very mature. This is mainly due to the lack of relevant business arguments around sourcing, not least around the due diligence issues that are critical for C-level executives.

Research commissioned by Nasscom offers some insight into the geographical and vertical splits across independent testing services. In 2010, 55% of the testing services provided by India-based companies were delivered to the US, with 35% delivered to Europe and 10% to the rest of the world. Across key verticals, testing services were split into financial services (52%), high tech and telecoms (22%), manufacturing (10%), and other verticals (16%). These data points were reflected in our

research, with financial services dominating the reference cases for managed services, and telecoms following as the second most important vertical.

The framework of industrialized IT services

The discussion around TaaS and outcome-based business models needs to be placed in the context of the industrialization of IT services and the adoption of cloud services.

The evolutionary path of the ICT sector toward an era of industrialized products and services is largely undisputed, but the pace of this unprecedented change and the extent to which the IT value chain will be transformed are uncertain. Cloud services and TaaS are illustrative of the future acceleration of industrialization. Marketing on the supply side has had a strong influence on the discourse around these propositions, which has led to differing views on its uptake.

While it is open for debate as to whether cloud computing is the game changer many vendors suggest, service providers still need to consider how to position themselves to safeguard their competitive advantage in an era of accelerated industrialization. Salesforce, an SaaS provider, is yet to make a profit after more than 10 years of trading, highlighting the significant costs associated with ramping up platforms and acquiring customers. A similar caution is implied in scenarios such as revenue cannibalization or lack of stickiness due to commoditized offerings. The common attributes of industrialization comprise:

- portfolio rationalization and management
- SOA
- Information Technology Infrastructure Library (ITIL)
- virtualization
- outsourcing
- offshore services.

In Ovum's view, any assessment of cloud services and services adopting cloud components (including TaaS) needs to be conducted within the wider framework of industrialization. Only through indicators for levels of standardization, progress with SOA, and other levers for industrialization can a service provider judge the level of risk it has to take in order to get clients onto highly standardized platforms. In the narrower context of testing services, agile methodologies have accelerated the levels of automation and introduced the concept of test-driven development (TDD). As part of this concept, tests are written to validate requirements before coding starts, with the code then measured against the tests. This requires developers to think about quality early in the lifecycle. As a result, automation and the movement toward cloud services are intrinsically linked.

Organizations need to re-evaluate their approach to IT assets. Many parts of IT are commoditizing, which is causing supplier choice to become less critical. Consequently, organizations should revisit assumptions about ownership and how to build IT capabilities in order to access scalable and low-cost

service components. History has shown that vendor promises of cost savings, quality improvements, and agility in outsourcing agreements were only realized when the right contractual frameworks were matched with the appropriate governance structures on the buyer side. Therefore, in our view, the assessment of TaaS should be evaluated through the long-established criteria for sourcing strategies, as opposed to technical aspects or simplistic arguments such as the shift from capex to opex. In the narrower context of testing, the higher utilization of testers through centralization and standardization is perceived as a key benefit.

OUTSOURCING OF COMPLETE TESTING FUNCTIONS REMAINS THE EXCEPTION

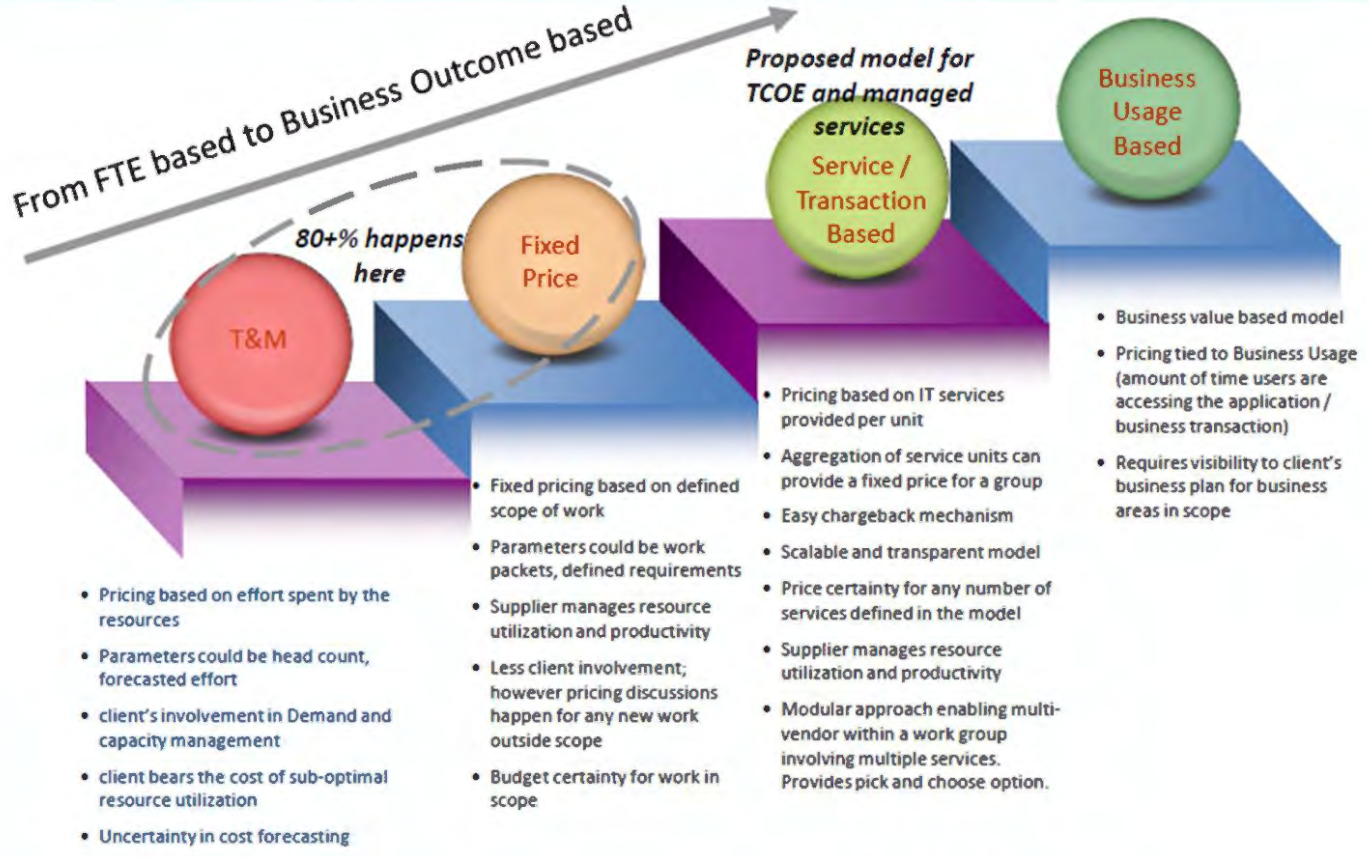
Testing-as-a-service is not aligned with the dynamics of cloud services or sourcing at large

Discussions around the outsourcing of testing services bear many similarities to those around contact center outsourcing 10 years ago. The differences between consultancy, project work, and managed services for specific projects or processes are blurred at best. The emphasis on cost and the lack of strategic investments are further resemblances. The maturation of outsourcing to a point where contracts encompass complete contact centers took a considerable amount of time, and even today the outsourcing of complete contact centers is by no means a regular occurrence.

It is not surprising that the industry prefers to use the term "managed services" instead of outsourcing. Despite the immaturity of the outsourcing proposition and the lack of strategic investments on the customer side, the potential financial benefits around outsourced testing are significant. The best example of this is SQS, a leading testing pure play. In comparison to mainstream IT services, testing services are a high-margin business. In 1H12, SQS achieved a gross margin of 30.7%, up 0.7% year-on-year. Managed services accounted for 33% of revenues, while consultancy and projects represented 63%. In its preliminary results for 2011, SQS stated that mature managed services engagements had a margin of 38.4%, indicating that – after ramp-up costs – these contracts have a higher profitability than consulting engagements.

However, the lack of comprehensive outsourcing deals is largely due to the current fragmented approach to testing, with the focus often on specific products or processes. The adoption levels of TCoE, as a reflection of standardization, are still comparatively low. With that, the use of cloud services is largely confined to the tool level. As such, it should be seen more as SaaS rather than as the comprehensive approach that the term TaaS suggests. This is shown in Sogeti's research in which 11% of respondents stated that they currently use TaaS, and 47% suggested that they would implement it within 12 months. In a more comprehensive approach to TaaS, it is positioned as a service catalog in which standardized service units are aggregated. TCS has succinctly depicted how testing pricing models are evolving. Tellingly, TCS also suggests that more than 80% of projects are undertaken on a time and material or fixed-price basis. Figure 3 outlines the evolution of pricing models and the main characteristics of these models:

Figure 3: Evolution of pricing models for testing services



Source: TCS

This depiction indicates that it is by no means clear when the notion of consumption or usage-based models will be realized. Other vendors such as IBM would describe these next-generation models as test utility or factory models. Most providers point to output-based pricing models as the most advanced model. Typical outputs are, for instance, priced by line of tested code. The metrics for these outputs are largely technical, but not business focused. This marks a clear distinction to outcome-based models in other outsourcing segments, and is most notable and comparable in BPaaS contracts where the outcome is aligned to business impact. As with BPaaS and outcome based-models, these approaches will take time to mature. Providers are facing significant challenges in migrating customers from fixed-price contracts to more comprehensive arrangements. Output-based models require a more mature testing environment than many customers possess. It needs to be reiterated that consumption-based pricing is prevalent for testing tools, but currently has no relevance in terms of outsourcing and managed services. Most testing managed services contracts have generic service-level metrics such as KPIs around utilization (resource utilization, application cluster coverage, tools, and environment utilization), enablement (certification goals), or cost (TCO, continuous improvement, self-funded initiatives). More specific KPIs and metrics are being developed for specific testing segments such as automated testing, performance testing, and operational testing.

A general problem around testing is the perception that the market is largely driven by tools rather than managed services. As a result, there is an emphasis on technology and domain expertise rather than on business and sourcing implications, and new technologies such as pervasive computing, virtualization, and cloud are adding to the complexity. One approach to tackling this complexity is to emphasize test-driven development (TDD) and automation as the best way to mitigate risk and reduce cost.

The adoption of cloud components is accelerating, but this is largely driven by testing tools as opposed to managed services or outsourcing. The notion of a service catalog will only appeal to mature client organizations with a high level of centralization and standardization. Beyond standardization, one perceived crucial benefit is the avoidance of downtime or idle time, which is one of the main cost drivers around testing. However, providers have very different ways of positioning TaaS, ranging from cloud-based tools, to discrete outsourcing, to catalog-style procurement. As with cloud services in general, providers need to find ways to balance the margin erosion that cloud deployments could create. In the short-to-medium term, providers point to system integration services, which are still required and would help to safeguard margins. The problem is that transparency of price points will lead to psychological price points that will be difficult to avoid.

Another element that is crucial to delivery models is that nearshore resources are considered critical for regions beyond the key US and UK markets. In that respect, testing has more in common with contact center or BPO services than with infrastructure or application management services. As a consequence, the competitive landscapes differ greatly by region. For example, India-based tier-2 or -3 players are taking a significant share in the US and UK markets, while SQS (based in Germany) has strong traction in Continental Europe.

VENDOR POSITIONING

TCS

TCS is emphasizing "assurance services" rather than testing as a way to differentiate from highly commoditized testing services. TCS Assurance Services contributes approximately 7.6% of TCS's overall revenues, roughly 33% of the testing services were derived from managed services. In line with its competitors, it has seen strong traction in financial services, retail, telecoms, high tech, and life sciences.

TCS believes that offerings that go beyond functional testing can be a key differentiator. This is also where the company believes it is gaining the strongest traction. Such areas include ERP, SOA, data warehousing, CRM, and mainframe migration. While its offerings are largely market and partner led, specific IP is focused on domain-led solutions. Examples include Basel, Single Euro Payments Area (SEPA), and Solvency validation tools in financial services that focus on compliance implications.

By building its processes around accepted standards such as ISO, CMMi, Six Sigma, and ITIL and auditing them with TCS's proprietary test process assessment framework, Tiara (TCS Integrated Assessment Framework for Assurance), TCS has optimized its test processes to reduce cost and minimize risk. This is also reflected by TCS's emphasis on using flexible business models to underpin its engagements. Its attention to KPIs and metrics is among the strongest in the industry, and mirrors the maturity of its customer base.

TCS positions TaaS as services bundled with tools or as an infrastructure-led approach. Linked to this approach is an emphasis on building test environments on cloud-enabled infrastructure services. In these areas, TCS is seeing increased traction with its customer base, particularly around performance, compatibility (multi-browser OS), and security testing. Furthermore, TCS has signed a licensing agreement with HP to use its tools as part of a multi-tenant approach. Currently, it is mainly leveraging partner offerings such as those of HP or Hitachi.

TCS focuses on building TCoEs for its customer base, and has already built these for 45 companies. For comprehensive outsourcing deals, TCS remains a serious challenger, and continues to see increased traction in this segment. A reference point for this traction is a large storage vendor that TCS is providing with complete test services for its enterprise storage operating system. TCS will provide 80-90% of the services for first two software releases and 96-99% beyond the second release. This generates approximately $10m in TCV.

RECOMMENDATIONS

Recommendations for enterprises

Enterprises should aim to explore the benefits of cloud-based delivery for specific parts of the testing lifecycle. The objective should be to evaluate cloud-based services for a faster time to market and better utilization rates based on highly standardized offerings, rather than following simplistic marketing suggestions of reducing cost. Enterprises should press vendors for roadmaps for these offerings in order to increase their ability to plan ahead. This should help to mitigate risks in terms of integration into legacy environments, and help to overcome increased complexity in the short-to-mid term.

Recommendations for vendors

Vendors need to market testing outsourcing capabilities more succinctly and more in line with sourcing strategies aimed at C-level decision-makers, which are more focused on commercial models than on technology. In particular, they should provide more clarity as to the distinction between staff augmentation, managed services, and outsourcing. The marketing should be more aligned with generic outsourcing segments (while emphasizing domain expertise and IP). Specifically, the emphasis on technology should be reduced.

Vendors need to provide more clarity on the benefits of cloud components in their delivery structures. The hype around cloud services is blurring and complicating the marketing communication around outsourced testing services. In particular, vendors should avoid using the same arguments for tools and outsourcing. Emphasis should be on time-to-market and better utilization rates.

Vendors need to evaluate the impact that commoditized cloud offerings have on their organizational structures and sales models. Furthermore, they need to align business models more closely with technology offerings, as outcome-based pricing models find only modest traction with customers. Potentially, cloud offerings could have a negative impact on the current high margins. Equally, the more commoditized the offerings, the more the emphasis in sales shifts toward business implications.

APPENDIX

Methodology

- Primary research through in-depth interviews with vendors
- Secondary research as a combination of desk research and leveraging Ovum's assets

Further reading

Services Guide: Outsourced Testing (November 2011)

Software Testing: State of the Function (August 2012)

The Evolution of Business Process Outsourcing: from Platform BPO to BPaaS (August 2012)

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