



WHITE PAPER

Evolution of Outsourced Testing — From Cost Control to Value Generation

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IDC OPINION

Research shows that UK QA/testing functions are maturing with time and QA is shifting from a tactical, ad hoc and unstructured process to a more strategic and centralised function. But even with the onus on internal test function restructuring, we find that such functions are still seen as "cost centres" rather than "service centres" by the internal business and top management. This requires UK QA managers to put forward a business case that raises the bar of testing and allows a better understanding of the value of structured testing within the business.

To help overcome the challenges of providing improved software quality at lower cost with limited internal QA competencies, UK organisations are more readily using and leveraging third-party testing services. But we find that UK organisations tend to be somewhat shortsighted in current adoption and use of such services, preferring to utilise staff augmentation services driven by urgent tactical requirements. While this approach is valid and brings cost reduction, it does not help to identify and manage risk as early as possible in the process and thereby achieve necessary and desirable business outcomes.

IDC research finds that there is no single defined or right approach to QA transformation, and that it very much depends on the maturity of a QA organisation. What is important, however, is for QA managers to start looking to the long term with an eye to how to transform and evolve QA test frameworks for a long-term fix.

As businesses evaluate how to increase agility in driving new products or services to market, leveraging effective partnerships with third-party providers (beyond staff augmentation) should be considered. Outsourced testing is playing a larger role in organisational change in a similar way to BPO services. This doesn't mean having to take a big bang approach to outsourcing, but it can be a gradual shifting in mindset and approach.



IN THIS WHITE PAPER

This IDC White Paper explores the current challenges facing UK QA managers and looks at how organisations can more readily exploit third-party testing services to enable significant QA transformation beyond cost reduction.

WHY TRANSFORM THE SOFTWARE TESTING FUNCTION?

Across the UK there is increased onus on quality assurance as organisations strive to successfully manage business process change. Quality assurance is a substantial part of the software life cycle, and inadequate software testing actively increases business risk with the potential for severe commercial consequences (e.g., lost revenue from system failures and downtime). This is in addition to a substantial waste of time and resources dedicated to rework, higher application maintenance costs (due to poor quality software going into production) and both internal business and customer dissatisfaction.

With quality becoming a key focus, IDC research points to internal test function maturity, as organisations look to reshape QA/testing functions to more adequately meet business requirements. A recent IDC application testing survey (March 2011) of more than 80 UK organisations finds that QA is shifting from a tactical, ad hoc and unstructured process to a more strategic and centralised function. Our survey finds that:

- ☒ Two in five organisations have centralised QA within the IT division
- ☒ One in six organisations has centralised QA in the business
- ☒ A quarter of respondents have established an independent and dedicated QA function

Key Challenges and Issues Facing QA Managers

While organisations attempt to modernise and transform in-house testing practices, annual budgets are squeezed and IT organisations are being asked to do more for less (with no funding to acquire new staff or technology). At the same time there is increasing regulatory pressure and an increase in critical projects required for compliance purposes. IDC finds that on average UK organisations spend over a fifth of business change project budgets on change requests, and some 14% of business change programmes are cancelled on a yearly basis due to lack of resources, budget and adequate expertise. Of the business change projects that run, respondents indicate that approximately half are delivered on time and on budget (but typically with a reduction in scope to be able to meet company deadlines), and the rest are either over budget or late. We find the most pressing issues challenging current QA and testing processes at UK organisations include:

- ☒ Lack of expertise/capabilities to design test cases effectively. Over 43% of UK organisations cited lack of expertise and the right capabilities to design test cases effectively. Though organisations are focusing on centralisation of QA functions in an attempt to lower cost structures and allow better distribution of

available internal resources, there remains a lack of expertise and knowledge required for testing across multiple platforms and applications. Adding to this challenge is the fact that many complex change programmes require adequate project management and change management expertise, as well as pure testing know-how.

- ☒ QA as it is conducted today is often seen as an additional cost and an activity that adds extra cycle time to the application development process. Even though we see an increased onus on restructuring internal testing functions, these are still viewed as "cost centres" as opposed to "service centres" by the business and top management. Structural/organisational change may be occurring but operational model change is slower. In the majority of cases, testing is tacked on at the end of application development rather than being bought up front in the development life cycle. As a consequence many organisations struggle with pushing the value proposition of testing beyond cost or crisis management, and are therefore limited in driving performance/productivity improvements. This is confirmed through a number of conversations we had with UK QA managers and CIOs. At a recent IDC UK CxO event focused on application testing, we asked delegates, "What is perceived by the business as the value proposition of testing?" Many said, "Testing is about managing the cost when things fail."
- ☒ Domain knowledge required to understand requirements and business risks. Due to the structure of current testing practices a number of organisations are challenged with gathering the right acceptance criteria to be able to adequately conduct user acceptance testing (UAT). There is an inherent lack of knowledge transfer to the testing team, lack of early sight of user requirements by testers and a general lack of collaboration. This therefore adds to the challenge of attaining optimal testing times in order to complete the required number of projects in a year.

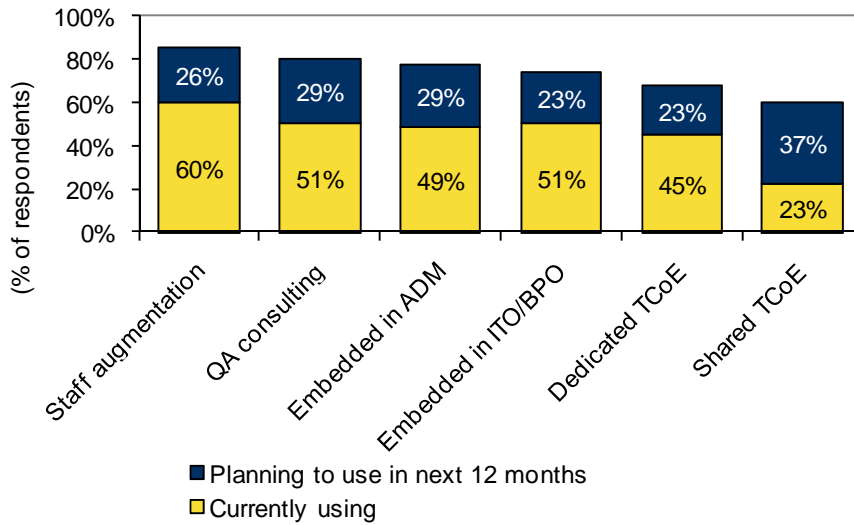
Challenges identified underline that testing is a reactive versus a proactive or preventative approach. QA managers and CIOs alike must work to shift the perception that testing is just a cost — to testing delivering business value. This requires putting forward a business case that raises the bar of testing and allows a better understanding of the value of structured (versus unstructured) testing within the business. There also needs to be a fundamental shift in the way things are done. We find the increasing pressure to improve quality at lower cost, combined with limited budget to build advanced internal QA competencies, drives the increased use and leverage of third-party testing services.

Test Delivery Models in Use: Staff Augmentation the Preferred Approach

While there is a range of test delivery models that are available and of interest across the UK, survey results demonstrate the common model is currently test resource staff augmentation (see Figure 1). Current challenges and a cost focused mentality push organisations to opt for short-term tactical wins (to ensure on time delivery of change projects) versus a longer-term approach and radical transformation of the testing function. While this approach is valid and brings with it cost reduction as well as a certain increase in software quality, it does not help in overcoming challenges related to requirements and validation planning, knowledge sharing and automated repeatable services.

FIGURE 1

Test Delivery Models — Use and Planned Adoption at UK Organisations



Note: ADM = application development and management; ITO = IT outsourcing; BPO = business process outsourcing; TCoE = test centre of excellence. n = 82.

Source: IDC European Application Testing Services Survey, March 2011

Testing services are also sold independently, either as project (QA consulting services) or fully outsourced solutions. The more traditional testing model, embedded within application development and management deals or within larger scale ITO/BPO engagements, are still well received by many organisations.

Outsourced Testing: Value Proposition Evolves

Research results also highlight the gradual shift from tactical to strategic QA, with managed testing services using a shared test centre of excellence (COE) or dedicated test COE gaining ground. Organisations utilising such models are moving beyond pure cost focused outsourcing strategies. They are steering towards the standardisation of test tools, processes and methodologies to drive increased consistency and synchronisation in QA delivery, in addition to leveraging reusable frameworks to accelerate delivery of new services.

IDC research demonstrates that UK QA managers understand that outsourced testing services can bring more than cost reduction benefits. This underlines a gradual change in the perceived value and maturity in the adoption of third-party test services. Our survey identifies the following key benefits to leveraging third-party testing services:

- Reduced risk of project failure
- Enhanced customer satisfaction
- Mitigation of risk and contribution to the success of the organisation
- An increase in the quality of the developed software

- ☒ Supporting the achievement of business objectives through operational excellence

While the benefits sought and gained from testing outsourcing seem to be moving from tactical short-term wins to address business transformation, taking quality assurance to the next level requires a change in approach.

THE PATH TO QA TRANSFORMATION

The Outsourcing Value Proposition: Understanding the Benefits

Testing is an attractive area to evaluate for improvement because the costs associated with poor testing early in the life cycle lead to dramatic increases in the cost for repairing defects and downtime during production. But developing an objective view of internal organisational weaknesses in the area of quality management to effect change is key. Figuring out where to prioritise quality management initiatives can be difficult and overwhelming for an organisation that is trying to press ahead with urgent tactical deliverables.

How can organisations best leverage third-party services to support the transformation of software testing functions from "cost centres" to "service centres"? What should organisations be addressing and how can they draw on lessons learnt from other outsourcing engagements?

To help organisations on the path to QA transformation and effective use of third-party services we can draw parallels with the maturity in business process outsourcing. Essentially, the transformation of the QA function is following a similar trajectory to business process transformation:

- ☒ The move from decentralised management/unstructured processes to centralised (shared services) environments; and then
- ☒ To a centralised sourcing management structure utilising third-party services.

For many organisations, outsourcing of business processes in the first instance was simply the transfer of current processing operations to someone else, based on the fact that they can perform them faster, better and cheaper via offshore labour arbitrage models. This approach mirrors what we are witnessing in outsourced testing services today. But the nature of demand for BPO fundamentally changed. As the BPO market matured and organisations became more comfortable with outsourcing, clients were less preoccupied with having direct control of the "inputs" (or assets) of a certain business process (the people, the technology, the location and operational activities) and became more concerned with business outcomes. Therefore more and more organisations started handing over control of the inputs to a third party, to benefit not only from resource scalability at reduced cost, but to fundamentally transform internal processes.

Through outsourcing, a change in approach realistically takes place over time, and it is very reasonable to "start slow and grow". Many organisations embarking on a BPO journey take small incremental steps in the right direction and in time they find their business functions improving such that they can more easily handle business growth and new requirements. It is these "intangible" benefits that underlined the success of

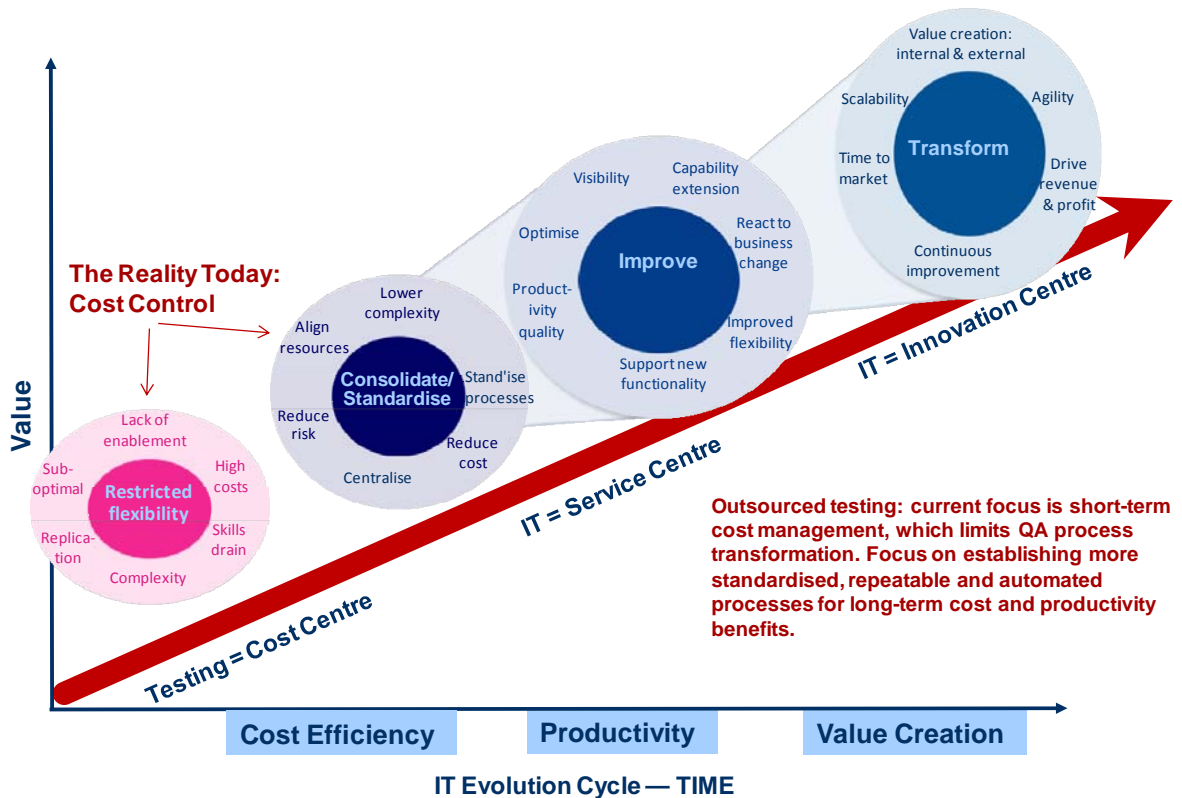
BPO. At the heart of BPO is a reorganisation of duties such that processes become more efficient, focus on continuous improvement increases, information access and timeliness improves, transparency increases, control mechanisms are strengthened and so on.

As businesses evaluate how to increase agility in driving new products or services to market within tighter time frames at lower cost, leveraging effective partnerships with third-party providers should be considered. Similar to the advantages of utilising BPO services, outsourced testing is playing a larger role in organisational change. Research shows the increased realisation that current-state QA/testing functions are not structured to adequately handle future demands (or even current demands) and that some level of renewed approach needs to be taken. This doesn't mean having to take a big bang approach to outsourcing, but it can be a slower, more gradual shifting in mindset and approach.

Learning from past outsourcing models and incremental steps that are taken to add value to the business, IDC identifies three key phases of evolution in outsourced testing services (see Figure 2). It is important to note that although the majority of organisations do tend to follow this development path sequentially, these three phases are not necessarily linear, nor does every company necessarily move through each phase.

FIGURE 2

Evolution of Outsourced Testing Services: Moving From a Cost Burden to Value Generation



Source: IDC, 2011

It is clear that cost efficiency is central to current testing strategies, as organisations struggle with meeting urgent tactical deliverables, but research demonstrates that a number of more advanced organisations are evolving their approach to testing.

We asked UK CIOs to state the top technical motivations to utilising third-party services and to indicate what the future focus of testing is at their organisation. There are a number of common themes that run across why organisations are more readily adopting third-party services:

- ☒ Theme 1: standardisation and increased consistency, for example, helping with test data management services, standardising internal QA environments across projects and supporting vertical solution testing (e.g., banking, telecoms).
- ☒ Theme 2: automation and more advanced tool expertise, for example, leveraging fully managed application life-cycle testing services, leveraging third-party tool expertise and using turnkey test solutions for performance test and test automation.

Results confirm maturity in the adoption of testing services to drive productivity improvements, at the same time as cost reduction/management. The survey also finds that future focus over the next two years will be around optimisation of tools and methodologies to drive better validation requirements. The top three priorities for the next two years were identified as:

- ☒ Having a test strategy that optimises use of testing services (both traditional and cloud based)
- ☒ Using a set of tools to address different validation requirements
- ☒ More focus on non-functional aspects like performance, availability, security etc.

These priorities and technical motivations underline the shift in focus from cost efficiency to productivity improvement. Smart organisations know they must address the triple challenges of knowledge transfer, proof of work and relationship management in order to move to the next level in QA transformation (from cost to service centre).

Lessons Learnt and Key Success Factors for Successful QA Transformation

Drawing on conversations with more advanced users of third-party testing services and using past experiences in leveraging outsourcing for business process transformation, IDC finds that there are certain components and processes that need to be established to enable successful in QA transformation.

- ☒ **Prove the business case for structured testing — look for the long-term fix versus the short-term repair.** Focus on pushing the value proposition for structured testing across the entire organisation. QA managers should look to the long term with an eye on how to transform and evolve QA test frameworks. There is the need to weigh up the existing investment and QA budget overruns against the requirement to drive fundamental structural change and evolution into the QA organisation. Sometimes it helps if you can translate different defects into monetary value, so that both the business and the technical resources

understand the gravity of an outage. This helps stimulate brainstorming between diverse teams and can support a positive change in perception of QA value, with the focus moving to a preventative rather than a reactive approach.

- ☒ **Look to achieve the best business outcomes.** IT environments are ever more complex and systems are no longer viewed in isolation but as a combined whole that must roll up to serve a business need. This requires alignment with the testing and QA methodology to support the shift from "just completing IT projects" to "delivering optimised business outcomes". Organisations must involve and engage with business users right from the start of a business change project, focusing on key business objectives, business value and business processes to identify and prioritise the risk of potential failures. It is critical to get the requirements and validation planning right, at the same time as determining the right things to measure with the right "credible" metrics to ensure desired results are achieved. Of course it is not just adequate to identify the right metrics — these need to be available and communicated to the right people on a continuous basis to allow true end-to-end test management. Organisations need to clearly align all relevant team members at all levels of the organisation — essentially, people need to work from the top down and not from the bottom up.
- ☒ **Improve internal collaboration and communication.** Set up defined communication channels and networks across all related and relevant groups (both internal and external). The cultural divide across groups and ineffective communication vehicles mean that IT often ends up deploying resources with little relevance to key business needs but reacting in an ad hoc way to the most strident requests or those that come in the door first. Even where communication capture is decent initially, business change and lack of a common information-sharing vehicle across groups still drive misunderstanding and poor iterative development approaches. Organisations must focus on the creation of clear statements of work and ensure that everyone is on the same page.
- ☒ **Focus on the right metrics and how to measure the ROI of testing.** Research shows that the total cost of ownership of testing is not readily analysed, or even that well understood, and this is a major inhibitor to moving to more advanced testing service delivery models. Organisations must find a way to consistently and thoroughly document all use cases and put a mechanism in place where the quality and quantity of an outsourcer's services can be judged and measured. This forms the basis for managing the relationship through key agreed metrics.
- ☒ **Focus on risk-based testing.** Take a risk-based approach to testing which requires the mapping of business benefits from systems to the functionality that IT will deliver, and then looking at what is likely to go wrong. This risk assessment can provide crucial information for decision making. Risk-based testing eliminates ambiguity in the status of test projects and injects confidence into the process. It also allows the prioritisation of software defects based on risk and provides an approach which is focused on critical user requirements at the testing stage, resulting in easier acceptance of the software by the customer.

Choosing the Right Partner

Partner Selection

Business-oriented testing demands a change in the vendor client relationship and in choosing the right partner. In this challenging economy, businesses can cut costs and increase agility, leveraging effective partnerships with third-party providers. But

organisations must choose partners judiciously, collaborate closely with both onsite and offshore resources, and focus on key areas of business benefit and cost saving. To achieve these benefits, organisations told IDC that they select an outsourcing partner that typically has local and offshore test centres and capabilities as well as a strong onsite consultancy presence. Key recommendations include:

- ☒ Evaluate relevant vendor industry test experience and how it can be applied to your operation. Determine the comfort level and pricing strategies of the vendor in providing a range of test delivery models for specific test engagements (e.g., staff augmentation versus project-based testing versus full outsourced TCoE).
- ☒ Understand the vendor's ability to assess multiple test scenarios with predictable outcomes (ROI tools) based on a combination of different schedule, resource, quality and cost factors.
- ☒ Strong communication skills — assess the strength of vendor communication and focus; collaboration skills between test consulting and test execution teams.
- ☒ Collaborative attitude — assess the vendor's successes in helping clients drive defect density reductions, productivity improvements, cost optimisation and predictability in test outcomes. Insist on a partner that will both see and oppose poor approaches while working to constructively create change once problems are identified.

Focus on Governance

Spearheading quality transformation within an organisation requires internal commitment from the executive team and structural support to identify, assess and drive innovative process quality improvements.

- ☒ Requirements and definition planning. Defining and managing requirements is crucial — involve all relevant groups in this upfront (IT, business, vendor). No matter how good the testing process is, if there is a mismatch in requirements this will equate to huge business risk. Push for greater clarity and specificity of contract terms in the upfront RFP process. This helps set clearer expectations through all phases of implementation, whether focused on target QA cost savings, defect reduction rates or productivity improvements.
- ☒ Evaluate and improve the "preventative" aspect of testing. The costs of repairing defects grow exponentially the later they are found and fixed in the software development life cycle. Work together with the vendor in targeted upfront shifts in requirement validation, test planning and test strategy. Organisations told us this is best facilitated through face-to-face onsite interaction, which demands honest, critical feedback rather than appearing to agree when there is doubt or misunderstanding.

CONCLUSION

IDC research suggests that organisations are somewhat shortsighted in their current adoption and use of third-party testing services, driven by urgent tactical business requirements. But a number of companies are starting to look at outsourcing QA and testing to ensure higher quality deliverables and to fundamentally support business transformation.

Ultimately there is no single defined or right approach to QA transformation, and this very much depends on the maturity of a QA organisation. For example, there may be a more immediate need to focus on rationalising tools and processes to sort out the multitude of tools in use. Alternatively, an organisation may be focused on test execution but lacks consistency in delivery, so needs to develop a test strategy and move towards a shared common test methodology. Therefore organisations look to draw on the technology and operational expertise of a third-party provider to provide optimum ways to standardise, streamline and enable prebuilt test frameworks. This allows organisations to achieve productivity improvements at the same time as cost efficiency.

Companies may also look to testing services from a business risk mitigation point of view — how to reduce the volume of defects in the field or on the production line or how to build quality into the software sooner. So then the emphasis may be on risk-based testing to assure relevant test coverage and improve overall testing cycle time — ultimately translating into lower operational overheads and greater efficiency.

A change in approach to QA realistically takes place over time, and it is very reasonable to "start slow and grow". Organisations should follow the example of BPO adoption and take small incremental steps to business transformation. What is important, however, is the alignment of testing and QA methodologies to support the shift from "just completing IT projects" to "delivering optimised business outcomes". QA managers need to start to look to the long term with an eye on how to transform and evolve QA test frameworks for a long-term fix versus a short-term patch-up. A short-term repair ultimately requires a refix, therefore overall cost and efficiency improvement and business value creation are unattainable.

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