



accenture<sup>></sup>technology

High performance. Delivered.

## Accenture Application Testing Services

Embedding quality into the application lifecycle

Strategy | Digital | Technology | Operations

# Quality applications power the high performance business

## Today's testing challenge:

### Balancing quality, speed and cost

IT budgets continue to be limited. Technology too is getting more complex. Add in the new realities—social, mobility, analytics and cloud—that are fundamentally changing the way companies do business, opening new avenues to customers, markets and growth at an unprecedented rate.

The business demands the highest level of application availability and stability. Development turnaround times are getting shorter, and many large enterprises are adopting DevOps and agile. Testing teams are under intense pressure to quickly and thoroughly test applications to support a wide variety of end user devices, such as laptops, tablets and phones, without sacrificing quality and speed of delivery.

IT executives globally are looking for new ways to improve application quality and speed and lower cost while managing their digital transformation. This is especially true when they spend as much as 10 to 12 percent of the annual IT budget fixing core application problems.<sup>1</sup>

## Accenture's approach:

### Radically improve productivity and manage complexity with intelligence

Our clients come to Accenture because we help them rise to these challenges. Accenture thinks differently about application testing—more innovatively and holistically. Instead of testing for quality at the end, we focus on it throughout the application lifecycle. In other words, we adopt a “quality in, quality out” mindset to cope with shrinking budgets and increasing technology complexity.

Our decades of experience delivering leading, end-to-end application testing services have taught us that, by adopting industrialised processes and infusing intelligence into delivery, costs can be reduced and application reliability improved.

And we go one step further. We work with you to improve testing productivity through predictive analytics, automation and industry specialisation while also driving higher quality across your application lifecycle. In many cases, we also assume the day-to-day responsibility for your testing operations.

Accenture Application Testing Services offers an intelligent approach to testing strategy and execution to help you unlock the potential of your business and reduce the cost of poor quality to less than five percent of the IT spend.

# Testing delivers business results

Accenture Application Testing Services can help improve your company's financial position through cost reductions, accelerated speed-to-market and productivity improvements with an end-to-end testing strategy.

We conduct comprehensive quality improvement activities in each phase of the application lifecycle—from plan, analyse and design to build, test, deploy and run—across both agile and waterfall based delivery models.

## Shift left

We complete these critical but often missed series of activities by adopting a 'shift left' approach to help improve upstream aspects of the testing process related to requirements, release and software configuration management. Only then do we focus on validating the design, functionality and performance of the application using innovative tools, automation and standardised testing processes to help improve productivity and reduce costs. As a final step, we help you operate your testing capability with a stronger focus on quality at a lower cost.

## Benefits

Accenture Application Testing Services can help you deliver benefits such as:

- Up to 50 percent reduction in test operations costs
- 30-50 percent productivity improvements
- Up to 90 percent reduction in critical defects reaching production
- Improved application and environment stability
- Up to 90 percent automation penetration depending on business process complexity
- Greater staffing flexibility with a global delivery model
- Up to 15 percent savings when using 1:many testing 'solution factories'

- Up to 45 percent reduction in test delivery cost when leveraging cloud-based services
- Up to 50 percent accelerated speed-to-market when using an agile delivery model

Figure 1: Accenture End-to-End Quality Model

Plan	Analyse	Design	Build	Test	Deploy	Run
Plan review	Requirements development and/or review	Design review	Code peer review	Test script execution (all stages)	Operational readiness test facilitation	Metrics trends and risk review
QA estimates	Change control participation	Test script development (initial)	Test script development (completion)	Metrics and reporting	Performance management and monitoring	Continuous improvement and innovation initiatives
QA team	Test condition development	Capacity Planning	Test-driven design	Test closure	Post-deployment validation	Knowledge repository and resource proficiency management
Test activity roles & responsibilities	Test cycle development	System performance KPI identification	Applied Statistics/Pairs Testing	User acceptance test facilitation	Operate the organisation	Calculate cost of poor quality
Test strategy development	Test approach development	Post-deployment validation	Test environment build	Performance test		Update automation plans and test scripts
	Testing cycle control	Test model development	Test data build	Software configuration management - builds/migrations		Optimise regression test packs
		Test environment and data requirements	Software configuration management - version control	Software configuration management - builds/migrations		
			Service virtualisation			
			Early performance testing			
Project Management—Release management/end-to-end governance, metrics and reporting						



# How we deliver breakthrough quality, speed and automation

We bring together comprehensive testing services, industrialised delivery, industry and technology capabilities and intelligent tools to drive quality, speed and automation.

## Comprehensive services

Accenture offers the entire breadth and depth of testing strategy and execution services—from core to specialised to digital transformation—across a broad array of applications, delivered under flexible business arrangements. Our services include:

### Assessment and Strategy

Based on the patent-pending Accenture Test Maturity Diagnostics aligned to the Testing Maturity Model (TMMi), we assist you with end-to-end testing assessment processes—from planning through final recommendations. We help assess your organisations' current quality maturity levels and develop a roadmap to improve it over time.

### Delivery Metrics

Measuring the Quality, Cycle Time, Cost & Maturity of not only testing but the entire IT Delivery Cycle is something that we often see companies overlook or pay little attention to. In our experience, those companies that invest in making sure there is consistency and accuracy of data and leveraging this to dynamically report on a set of key metrics is absolutely critical in not only measuring current progress but also demonstrating how investments in more mature development methods has realised true business benefits. In support of this we have developed the Accenture Test Metrics Framework (TMAF) that provides out-of-the-box metrics definitions, suggested target levels and physical dashboards. We have also taken this a step further through the development of delivery maturity models, questionnaires, frameworks and business case models to enable companies to kickstart

delivery maturity transformation programs. These frameworks are very focussed on transition to Agile and Continuous Delivery operating models.

### Automation

We offer a robust set of intelligent tools and assets to consistently support the entire spectrum of automation-related testing activities and drive reduced costs and improved speed and quality.

### Performance Engineering and Testing

We help conduct a wide range of performance testing and performance engineering services to diagnose and improve the code and architecture that impacts application performance.

### Testing Centre of Excellence

We can help you manage or set up a dedicated Testing Centre of Excellence either at the enterprise level or within specific business units, thereby enabling delivery of standardised and industrialised testing services that effectively combines our people, processes, tools and reusable assets.

For organisations looking for digital transformation we offer:

### Testing as a Service<sup>2</sup>

We deliver an elastic, on-demand suite of testing tools and environments built on the Accenture Cloud Platform that can be provisioned dynamically and repeatedly to enable consistent testing practices.

### Digital Testing

We offer a wide range of processes and innovative tools for developing digital

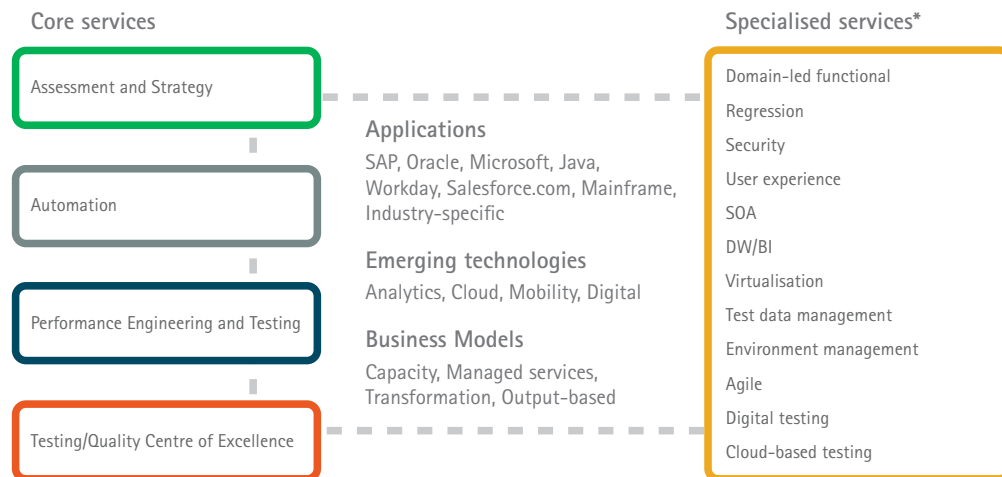
applications—mobility, analytics and interactive—to industrialise and accelerate testing services across the experience design continuum—from innovation and strategy through to detailed design and implementation. Our approach to this is the ROSA<sup>3</sup> (Remote, Offshore, Simulate, and Automate) Framework which is aimed to reduce cost, create efficiencies and increase time to market.

## Industry and Technology

The majority of Accenture's testing professionals focus on functional test delivery while also developing industry vertical specialisation. More than 80 percent of our testing professionals are specialised across 40 industries. In addition, a number of our testing team members specialise in various technology platforms, including SAP, Oracle, Workday, Salesforce.com and industry-specific applications among others. Industry and technology specialisation allows Accenture to provide more focused testing services for industry applications and functionality, such as manual and automated testing scripts for health, property and casualty insurance claims, with higher quality and speed. A deep understanding of the industry context also improves our end-to-end focus on quality and productivity, and makes service transitions smooth and less risky.

Additionally, our professionals complete comprehensive industry and testing certification programs including International Software Testing Qualifications Board (ISTQB), Certified Quality Software Analyst (CQSA) and other common testing certifications.

Figure 2: Accenture Application Testing Services



\*The specialised services list is not exhaustive.

We have a global testing training and certification program—Accenture Technology Academy (ATA) Tester and Test Designer Certifications—developed in collaboration with the Massachusetts Institute of Technology (MIT) Professional Education.

## Industrialised Delivery

Accenture delivers application testing services through our Global Testing Centre of Excellence Network of more

than 30 centres located in 17 countries. As part of our Global Delivery Network these centres combine skilled people, industrialised processes and reusable, intelligent assets to offer cost-efficient and consistent access to extensive, industry leading capabilities on a 24/7 basis.

The centres operate at scale and provide you strategic options across specialised skills, time zones, commutability, and especially language and culture. In each centre,

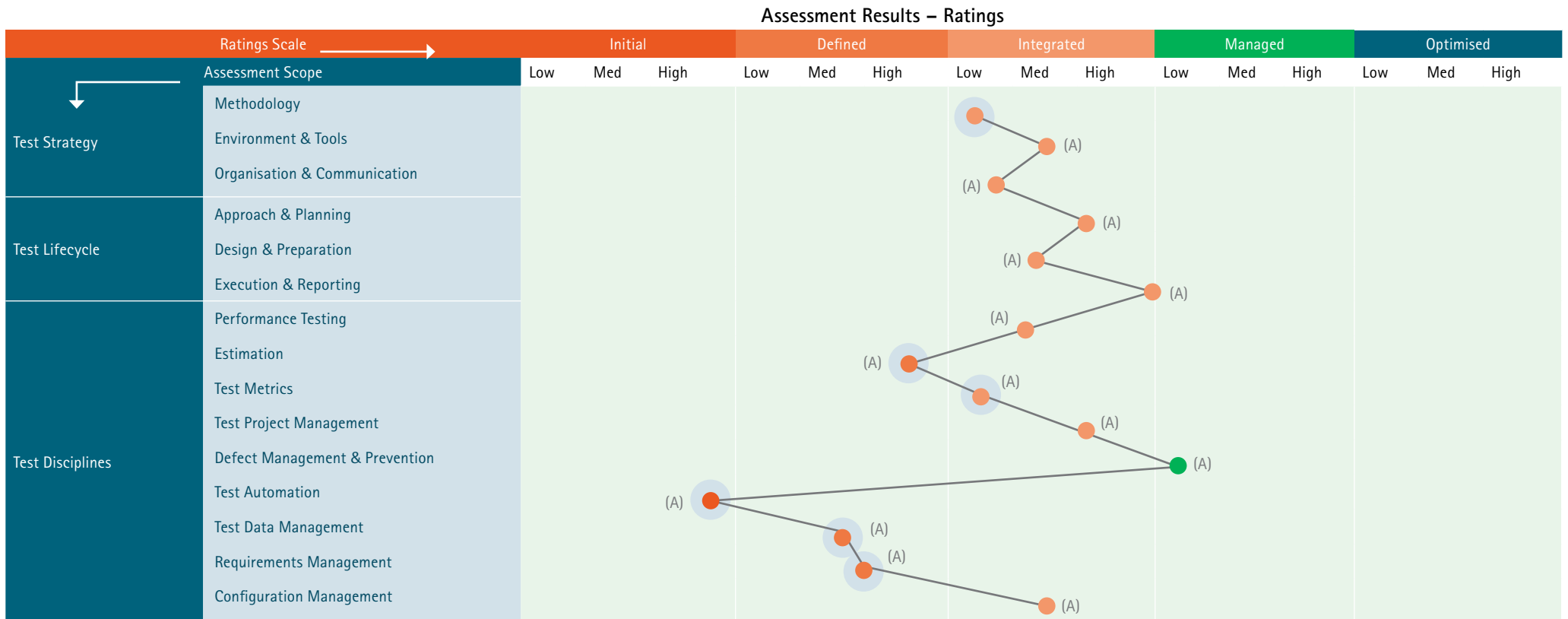
our testing professionals focus on providing integrated service delivery and use a successfully demonstrated approach focusing on testing maturity to help establish, maintain and improve operational excellence of your testing organisation.

Given our emphasis on quality, our Global Delivery Network is ISO 27001 and Capability Maturity Model Integration-certified, and has other relevant industry certifications as well.

You can either leverage the existing centres or we can help you set up and run your dedicated Testing Centre of Excellence. In this scenario, we leverage our Test Metrics Framework to drive transparency across the applications lifecycle and serve as the basis for service level agreements.

We also use dashboards and tools to measure various aspects of the testing and delivery process, including how quality and productivity are improving in each testing effort.

Figure 3: Assessment and Strategy: Accenture Test Assessment Framework (Testing Maturity Model)



● (A) Large Discount Retailer (top 40 in the Fortune 500)

Projects view

## The next testing frontier: Quality Centres of Excellence

Companies who are already conducting testing offshore and automating testing to improve productivity may be asking, what is next?

Accenture is breaking new ground in application testing by taking a strategic and methodical approach to improving quality upstream in each phase of the application lifecycle—a strategic concept we call Quality Centre of Excellence.

A Quality Centre of Excellence creates transparency through an end-to-end view of defects, addressing them where they were injected, not where they were detected. Quality Centres of Excellence focus on incorporating measures and visibility into the application lifecycle, and providing insights into where to drive targeted improvements.

A Quality Centre of Excellence identifies root causes and reduces defects earlier in the cycle significantly improving the quality of code sent to testing. Quality code also makes the testing turnaround time even shorter, which translates into improved speed-to-market.

## Innovation and Intelligence

Accenture continually strives to be ahead of the curve in application testing. As part of our commitment to quality and productivity in every phase of the application lifecycle, our people collaborate to develop trendsetting testing and end-to-end quality related innovations. We help you achieve your stated IT objectives by offering proprietary, innovative and intelligent testing assets and tools.

### Accenture Intelligent Tools for Test Operations

We use our next generation suite of productivity tools that augment and automate test preparation, execution and management to drive improved quality, efficiency and effectiveness of your test organisation. The tools drive intelligence into the testing lifecycle for modular script reuse, test execution prioritisation, automatic script assignment and defect management. The tools enable savings of 10–30 percent across various phases of testing; 25 – 40 percent during test preparation through reuse of modular scripts.

### Accenture Intelligent Tools for Test Analytics

Accenture Scenario Predictor leverages statistical techniques to analyse and proactively manage key parameters that can influence the project schedule, effort and defect leakage.

Accenture Performance Analytics helps to improve the speed and quality of decision making through root cause analysis based on process variations, performance baselines and augmented visual analytics to identify improvement opportunities.

## Accenture Testing as a Service

Accenture Testing as a Service gives you the opportunity to test-drive our unique testing solutions in real time, providing you an on-demand, scalable and cost-effective model. It provides provisioning and management of test environments, data and tools to enable a significant reduction in the test delivery cost through integrated templates, accelerators, methodology, and a flexible, pay-per-use model.

The solution enables build up and tear down of test environments on an ad hoc basis without requiring the purchase of expensive infrastructure and reducing provisioning time. It also provides testing tool hosting (including the HP tools) in the cloud and enables on-demand test data management.

### Accenture Testing Accelerator for SAP

The tool enables intelligent automation without scripting and knowledge of application modules to reduce the test planning and execution effort. It scans the implemented SAP system to provide insight and leverages the relationship matrix to link the configuration and technical objects to test scripts thereby enabling impact analysis and refresh of the scripts. Its diagnostics capability helps determine test scope and process variations based on actual SAP application usage.

### Applied Statistics Testing

Accenture leverages design tools to incorporate applied statistics based testing into Accenture Delivery Methods for Testing, our industrialised testing approach. Applied statistics-based testing is a method for conducting more rigorous, up-front testing planning to optimise test coverage and quality while minimising test effort.

The method drives significant productivity improvements by determining the combinations of features and data permutations to be tested and helps improve the quality and cost of poor quality by finding problems early in the lifecycle when they are least expensive to fix.

### Accenture Test Repository

The global repository stores Accenture's proprietary testing assets, including our standardised and reusable testing industry packs which facilitate acceleration of test plan development in specific industries. The asset enables savings of 25–40 percent in test preparation, industry specialisation, efficient knowledge transition and lower cost to serve due to faster ramp-up, productivity gains and improved quality.

### Accenture Requirements Engineering Suite

The asset is a bundle of tools that accelerate requirements gathering and maintenance and automate requirements quality validation. It provides an automated review of documented requirements in order to validate the level of detail, accuracy (from a language perspective) and 'testability' and generates reports to provide different views of the requirements.

### Accenture Automation Integrator

This innovative asset automates the regression test phase, allowing extensive reuse of test cases for end-to-end application even across different technologies and an estimated saving of 30–70 percent of the test phase effort. The asset reduces the effort for test script creation and maintenance and ensures higher quality of delivery through faster and complete regression test.

## Accenture Test Case Designer

The tool automatically generates test cases from requirements to improve test design productivity. It reduces effort by up to 50 percent and enables test coverage accuracy of more than 90 percent.

## Accenture Testing Frameworks for the Connected World

Accenture offers a successfully demonstrated model of testing libraries, simulator labs and remote testing labs to help original equipment manufacturers and mobile operators to test mobile devices. Using our Remote Test, Offshore, Simulate and Automate model, you can deliver higher quality handsets with potentially up to a 60 percent reduction in testing costs, while improving time to market and increasing the volume of release testing.

## Accenture Quality Assistant

The tool helps to measure, track and improve application quality using analytical methods to generate the cost of defects and their source.

## Third party tools

We have formed strategic alliances with HP, IBM (Rational), SAP and Microsoft and also maintain strong relationships with a number of major testing tool suite vendors such as Computer Associates, DeviceAnywhere, Grid Tools, Perfecto Mobile, Tricentis, and Worksoft in order to quickly assemble an appropriate solution for you. Accenture has been HP's Partner of the Year for five of the last 10 years. Additionally, our arrangement with IBM Rational enables use of their Application Lifecycle Management tools at no cost to you (with some caveats).

## Strategic Testing Models and Approaches

### Output Based Testing

The aim of Output Based Testing is to reduce the cost to serve through higher productivity, shared costs, and shared leading test practices to offer fixed pricing for low level outcomes.

Output Based Testing is a means to define and deliver testing by the artefacts of the processes that yield quality measurements. This means testing needs to be discretely defined and predictable. We rely on measuring quality through a focus on delivering test outcomes based on productivity targets with a flexible and scalable workforce that manages to a queue for testing services.

Our commercial pricing is based on the purchase of units and unit blocks, more specifically:

- Cost to client is based on delivered outputs
- Our approach is based on the definition and use of discrete test factory services from an Accenture Test Factory Model
- Our solution leverages a unit based test factory service menu based on our experience with testing at similar clients
- Units are redeemed for test outcomes/ outputs such as test results, test cases, and test metric reports
- Units can be purchased individually or in bulk at discounted rates

## Risk Based Testing

Risk-Based Testing helps fulfil the mandate to maximise quality where it matters most to the business in order to minimise risk at time of deployment. We do this by:

- Evaluating and improving the quality of requirements
- Improve both test effectiveness and efficiency
- Monitoring and reporting progress in reducing risk
- Adjusting risk reduction actions (e.g. test scope) based upon the effectiveness of prior actions or additional knowledge
- Gain consensus on high risk requirements.

Accenture's approach is via:

- A targeted effort using early risk analysis to underscore the concerns and objectives of senior management and align the rest of the development lifecycle including the activities of testing organisations behind this
- A structured method and process guiding test managers in focusing their test activities on areas that lead to the greatest reduction of solution delivery risk
- Use of frameworks and tools (risk based and statistical tools) to systematically and dynamically assess testing risk and coverage

## Crowd Sourced Testing

Crowdsourced Software Testing is gaining greater traction in particular within the mobility-related areas of web and app development. Accenture has been closely aligned with this trend where we have performed evaluations of all of the major global vendor offerings and some specific to the Australian market. We have worked with many of these vendors and also look at leveraging our own internal Crowdsourced models where relevant.

# IT Delivery – The Next Frontier

## New Delivery Approaches

Current technology trends (like Social, Digital & Cloud) have increased the demand for faster delivery and shorter time to market. In response to this, Agile methodologies and DevOps practices like Continuous Delivery have gained popularity. Agile methodologies emphasise the ability to adapt to changing requirements, customer collaboration, speed to working software and iterative development. The Accenture Delivery Methods (ADM) include provisions for testing in Agile. The ADM for Distributed Agile (multi-location) methodology incorporates Unit Testing, Assembly Testing, Regression Testing and Application Product Testing into every sprint phase and prescribes a high degree of automation for testing activities.

## Collaboration and Automation at the core of delivery

Accenture defines DevOps as: "Using governance and automation techniques to optimise collaboration across development and operations to enable faster, more predictable and more frequent deployments to market".

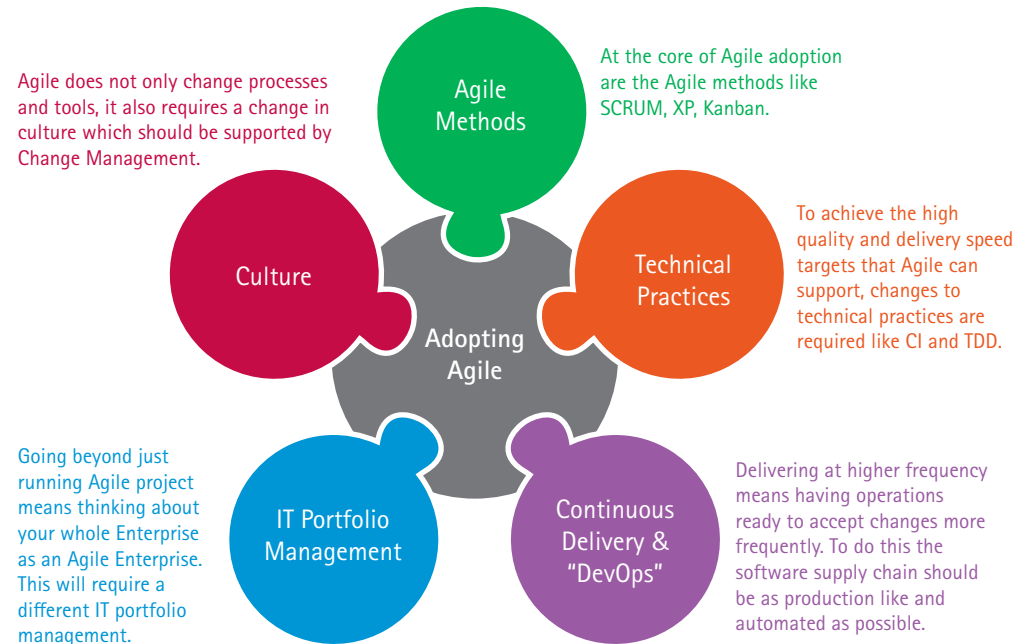
Delivering at higher frequency means having operations ready to accept changes more frequently. To do this the software supply chain should be as production like and automated as possible and development teams need to work closely with operations teams.

To achieve the expected speed to market the testing process needs to be adjusted to increase the levels of test automation and to align the responsibility for testing and quality closer to development teams. This changes the responsibility of the testing groups towards a more strategic and more technical group of experts – an Agile Testing Centre of Excellence.

Accenture has proven experience to help customers make this shift and transition from traditional waterfall delivery and testing approaches towards faster more iterative delivery models using Agile and DevOps. Furthermore, as an extension to the TMMi Assessment, Accenture leverages a DevOps Assessment Framework to assess, measure, score and help define a roadmap to enterprise Continuous Delivery.

Our experience ranges from Agile and DevOps practices on targeted areas of the business through to increasingly complex mapping of how to approach hybrid models across both Waterfall and Agile in parallel in the organisation.

Figure 4: A combination of a number of components will lead to Agility at Scale





# Our Experience in Australia & New Zealand

## Extensive industry experience

In ANZ, Accenture's testing portfolio consists of a comprehensive list of clients across a variety of industries, including communications, media & technology, financial services, products, resources, and health & public services. Our focus is on engaging long term partnerships with our clients, adhering to our message of a holistic, end-to-end quality strategy as a way to drive cost savings through quality and productivity improvements, and reduce testing costs whilst increasing breadth of testing.

Accenture has a dedicated pool of senior resources with extensive testing experience in ANZ who are ready to provide services in test governance, strategic direction and program test management. We are capable of ramping up onshore and offshore test teams in a short period of time, either in partnership with client teams, or in a fully outsourced or managed service model, at the same time leveraging our extensive global TCoE network for support and experience.

Our experience in ANZ ranges from conducting numerous testing strategy and maturity assessments including definition of TCoE and IT Delivery Operating Models right through to fully managed testing services. We have the breadth and depth of experience and knowledge, drawing upon our local and global resources, to consult on targeted initiatives including (but not limited to) delivery metrics, test strategy, test automation, Continuous Delivery practice establishment, Agile Coach placement services right through to fully managed and outcome-based testing centres. We've performed these functions at scale for some of the largest companies in Australia and globally and understand the associated organisational and commercial realities of moving to the next level of enterprise delivery and testing maturity.

# Client case studies

A communications leader saves £45 million and dramatically improves application quality with an intelligent test factory

This communications industry leader sought to take its application testing services to the next level. Accenture helped consolidate testing suppliers from five to two and establish an intelligent test factory that will save the company £45M over four years using an output-based commercial model. These dramatic savings are delivered through a greater than 95 percent offshore solution, a rapid transition of 550 FTEs in four months, and extensive automation supported by advanced tools such as the patent-pending Accenture Intelligent Tools for Test Operations.

A large telecom service provider was able to cut production defect rates in half with the help of Accenture's testing solution

This large US-based telecom service provider wanted to reduce application development and maintenance costs and enhance application performance by streamlining its quality assurance and testing processes. Accenture set up a Testing Center of Excellence (TCoE)—leveraging its global delivery capability—to help the client drastically reduce production defect count by approximately 97 percent, transition from a waterfall to an Agile development model and improve quality by implementing test automation frameworks, leveraging Accenture Intelligent Tools.

A leading bank significantly improves speed-to-market with testing automation solution

Following a series of large acquisitions, this leading bank needed to ensure seamless service to its existing and acquired customers while radically simplifying its application portfolio. Accenture helped the bank achieve these goals and enabled faster time to market for new application releases by establishing a Testing Centre of Excellence to automate the testing efforts for more than 300 applications used by the consumer banking division, including mobile and online banking applications. The automated testing efforts reduced the risk of migration, and ensured error-free applications 98 percent of the time.

# Analyst recognition

"Accenture has established itself amongst the Leaders in independent testing services through meaningful investments in building capabilities across the testing services portfolio (testing CoEs, proprietary solutions, delivery workforce, etc.). Legacy strengths in consulting and system integration has helped Accenture position itself strongly in the testing strategy, assessment space."<sup>4</sup>

"Largely due to its software testing relevance and to the overall dynamics of Accenture, Accenture Application Testing Services is well positioned to beat the market."

"Accenture's IP and tools strategy and breadth of accelerators is comprehensive. One of its main benefits is to expand from test execution purely to include test design. Accenture Application Testing Services' strategy is to further enhance its IP and tools, focusing on industry-specific test repositories, test execution tools, and test design and QA accelerators. One of the specificities of Accenture is focus on bringing automation and accelerators early in the SDLC."<sup>5</sup>





## References

- <sup>1</sup> Accenture High Performance IT research
- <sup>2</sup> Testing as a Service (TaaS)
- <sup>3</sup> Mobility & Device Testing – ROSA
- <sup>4</sup> Copyright Everest Group: Independent Testing Services – PEAK Matrix™ Assessment and Profile Compendium 2014
- <sup>5</sup> Copyright NelsonHall: Outsourcing Vendor Profile of Accenture – Software Testing March 2013
- <sup>6</sup> Accenture Technology Vision 2014



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## Contacts

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## About Accenture

Accenture is a global management consulting, technology services and outsourcing company, with more than 305,000 people serving clients in more than 120 countries. Combining unparalleled experience, comprehensive capabilities across all industries and business functions, and extensive research on the world's most successful companies, Accenture collaborates with clients to help them become high-performance businesses and governments. The company generated net revenues of US\$30.0 billion for the fiscal year ended Aug. 31, 2014. Its home page is [www.accenture.com](http://www.accenture.com).

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