

Test Maturity Assessment and Improvement Using TPI[®] and Quality Blueprint

Performance driven. Quality assured.





Benchmark, Blueprint, and Execute to Build a World-Class Test Organization

The testing world has changed; focus has moved from testing single systems to ensuring multiple business processes are robust and fault-free for users.

Many organizations lack sufficient insight into the effectiveness of their current testing processes however, leaving them unable to efficiently achieve the system quality required by the business.

This lack of maturity in a test organization is often most evident in:

- Frequent conflicts between the business and IT;
- High operating costs, including resources, set-up, and test-center maintenance;
- Poor product quality and inadequate intelligence on why quality level has dropped;
- Slower time-to-market and high employee churn.

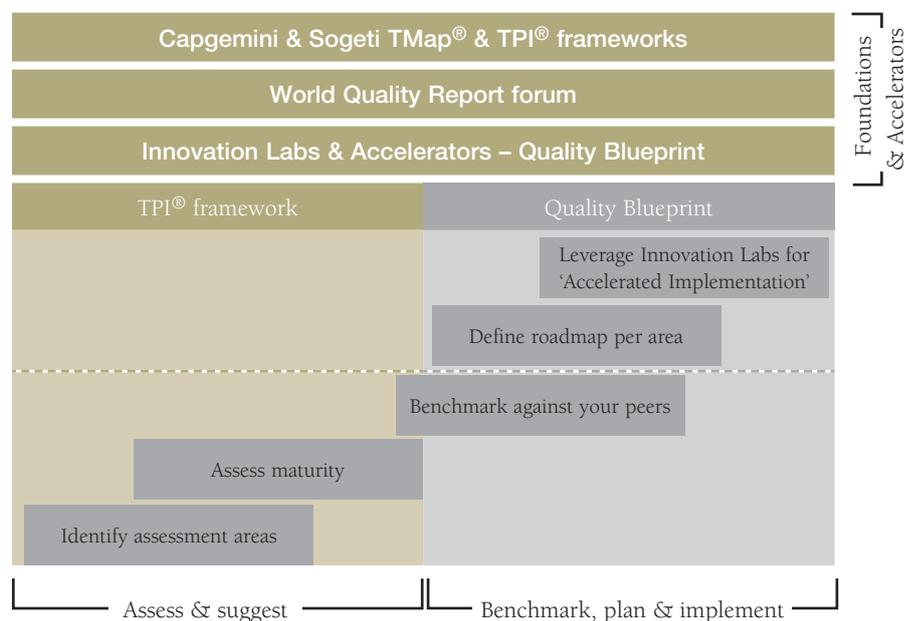
Many organizations recognize that improving the test process is essential for ensuring the quality of the system being tested and business process itself—but remain unsure of the steps required to make this improvement successful.

Cappgemini and Sogeti have developed a highly effective approach to test process assessment and improvement, based on the combination of our world-leading Test Process Improvement (TPI®) methodology and our Quality Blueprint framework (Figure 1). This service can help you address your key test process challenges, realize a higher level of test maturity, and achieve more streamlined and efficient processes.

The steps we take are:

- Measure and score your existing maturity—using our TPI® foundation;
- Benchmark the test maturity of your organization against the industry standard;
- Define a roadmap for success—actionable plans that focus effort and value on business priorities;
- Leverage industry best-practice Accelerators to reduce cost and improve productivity.

Figure 1: End-to-end assessment and improvement



Business-Driven Optimization of Test Processes

Four Stages to Test Process Improvement

1. Measure and Score your Existing Maturity

The first step is based on TPI®, our world-leading model for providing an objective step-by-step guide to business-driven test process improvement. Applying this model provides an in-depth insight into the maturity of your organization's test processes as well as recommendations for gradual and controllable improvement steps. Built on the knowledge and practical experience of our testing experts and our clients who use it, the TPI® model can be structurally aligned with your business drivers, rather than just with IT or testing goals—meeting your specific requirements as cost-effectively and efficiently as possible.

TPI® carries out a detailed analysis of your current test process, categorizing it into 16 Key Areas, ranging from Stakeholder commitment to Test environment. The assessment identifies the key challenges in your test organization and analyses the readiness of your organization to meet current and emerging test challenges against three Maturity Levels (Controlled, Efficient, and Optimizing), and associated Checkpoints. The output—the Maturity Matrix—is a comprehensive analysis of your organization's testing ability, enabling you to clearly visualize what areas need to be improved, as illustrated in Figure 2.

As an integral part of the broader software development cycle, testing is influenced by the other processes. TPI®'s Enablers provide a better understanding of the explicit correlation between testing and the adjacent software development lifecycle, helping you identify the quick wins that have broader impact.

Each test process assessment is customized depending on the needs of the organization—taking into account industry, business goals, and software development methods (such as Agile). TPI® can be used in many test situations such as integration testing, outsourced managed testing, and even for starting up a test organization from scratch.

Figure 2: The essential elements of the Business-Driven TPI model, shown in the Maturity Matrix

| | Improvement Suggestions | | | | | | | | | | | |
|----------------------------|-------------------------|------------|---|---|-----------|---|---|------------|---|---|---|---|
| | Maturity Levels | | | | | | | | | | | |
| | Initial | Controlled | | | Efficient | | | Optimizing | | | | |
| 1. Stakeholder commitment | | A | B | B | C | F | H | H | K | M | M | |
| 2. Degree of involvement | | A | B | C | E | H | H | J | L | L | | |
| 3. Test strategy | | A | A | B | E | F | F | H | K | L | | |
| 4. Test organization | | A | D | D | E | I | I | J | J | K | L | L |
| 5. Communication | | B | C | C | D | F | F | J | M | M | | |
| 6. Reporting | | A | C | C | | F | G | G | K | K | | |
| 7. Test process management | | A | A | B | B | G | H | J | K | M | | |
| 8. Estimating and planning | | B | B | C | C | G | H | I | I | K | L | L |
| 9. Metrics | | C | C | D | | G | H | H | I | K | K | |
| 10. Defect management | | A | A | B | D | F | F | H | J | K | L | L |
| 11. Testware management | | B | B | D | E | I | I | J | L | L | L | |
| 12. Methodology practice | | C | D | E | | F | H | J | J | M | M | |
| 13. Tester professionalism | | D | D | E | E | G | G | I | I | K | K | M |
| 14. Test case design | | A | A | E | | F | I | I | J | K | K | M |
| 15. Test tools | | E | E | E | | F | G | G | I | L | M | M |
| 16. Test environment | | C | D | D | E | G | H | J | J | L | M | M |

Key Areas (rows 1-16), Enablers (rows 1-16), Checkpoints grouped into Clusters (columns 2-11)

2. Benchmark the Test Maturity of Your Organization

The next stage is to enter the results of your assessment into our Quality Blueprint automated tool, which contains comparable data from hundreds of international Capgemini and Sogeti test assessments. It uniquely enables a comparative benchmark against the industry standard—the test maturity of other firms in your sector, including your competitors. This market intelligence enables you to understand how others are addressing similar challenges, helps you make better-informed and competitive-based decisions, and serves as a starting point for your test transformation, see Figure 3.

The data in our tool is continuously updated based on new assessments and industry reports including the findings from our *World Quality Report*¹. Carried out with the support of HP, this provides market intelligence on the sector-specific quality trends around testing technologies, processes, organizations, outsourcing, and economics.

Using this information, we work with you to define ‘success’ and establish the short- and long-term destination points of your transformation, based on your own business-specific objectives, competitive positioning, or sector-specific standards.

¹ *World Quality Report*, an annual in-depth study of enterprise application quality assurance testing and the emerging trends in Application Lifecycle Management, produced by Capgemini and Sogeti, with HP.

3. Define Your Quality Blueprint Roadmap for Success

It can be challenging to define the steps required to improve and control test processes but, with a starting point and destinations clearly identified, we can then work with you to plan an effective action plan.

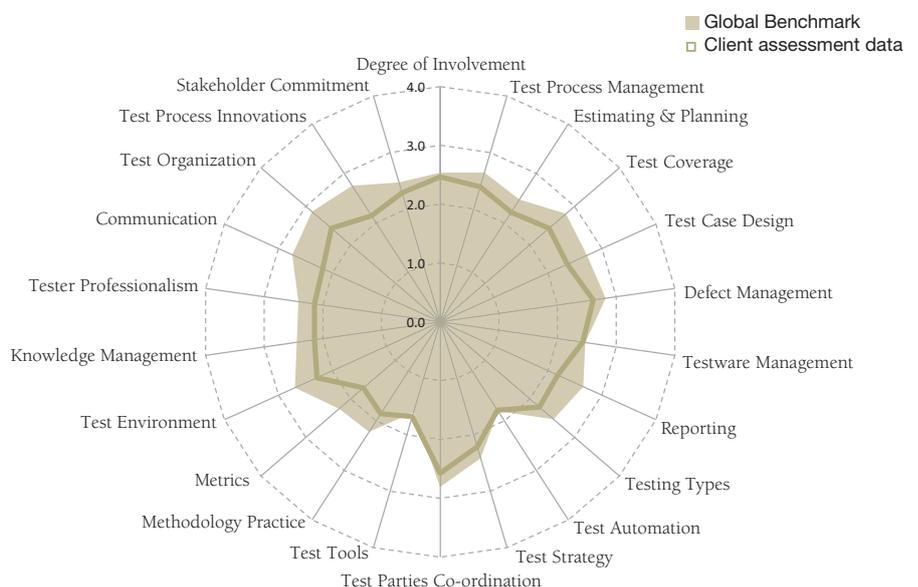
Our experience has shown there is no standard formula to achieve the perfect roadmap; it must be built collaboratively in close alliance with your test organization with its unique business priorities, knowledge, and key stakeholders.

The ‘Improvement Suggestions’ within TPI®, based on practical experience, provide realistic ‘how to’ recommendations and the TPI Checkpoints, grouped into Clusters, clarify the necessary stepwise improvements for incremental transformation.

These are both integrated into our Quality Blueprint roadmap that is usually developed quarter by quarter across a range of the most important parameters for your organization—such as estimation, coverage, and team structure.

This business-driven approach, illustrated in Figure 4, prioritizes quick-wins based on value versus effort to ensure that the highest yield improvements are initiated first, and provides an opportunity to motivate your team and build ownership of the transformation.

Figure 3: An example quality benchmark carried out for a client



4. Leverage and Implement Industry Best-Practice Accelerators

Our Quality Blueprint framework is more than just a methodology. Using automated tools, frameworks, accelerators, and solutions developed in our Innovation Labs or with specialist partners, you will gain the benefit of our extensive testing experience.

These Accelerators have been developed by us over the years, across multiple domains, technologies, and geographies. They use real-world data from hundreds of test assessments performed to give additional rigor to your improvement roadmap.

Both industry-specific and generic examples include:

- Mainframe Automation Tool;
- Defect Prediction Modeling Tool;
- Model-based Testing Framework;
- TMap® Accelerator—a plug-in for key partner software delivery tools.

Our Quality Blueprint framework also enables you to measure the impact of your test maturity after transformation across all the maturity parameters—such as cost and productivity.

Initially changes in test maturity should be monitored regularly through parameter improvements, but as test maturity reaches the highest levels, benefits will become more visible and easier to measure, through reduced production defects, increased test efficiency, and lower costs of quality assurance.

Our experience indicates that you can reap initial benefits from this quality process transformation in just four weeks through actionable plans prioritized based on effort and value, but most projects take three months or longer.

Figure 4. Mapping the step-by-step transformation for a Financial Services client

Sample Roadmap

| Roadmap | Q4 2009 | Q1 2010 | Q2 2010 | Q3 2010 | Q4 2010 |
|--------------------------------------|---------------------------------------|--|---|---|--------------------|
| Team Structure & Resource Competency | Δ Define team structure | Δ Augment SOA process skills | Δ Build multi-site team | Δ Define competency framework | |
| Test Management & Coverage | Δ Migrate manual test cases | Δ Coverage for VisionPlus | Δ Coverage for Triad | Δ Coverage for finance | Δ Coverage for IVR |
| Test Process Methodology | Δ Testing Glossary | Δ End-to-end STLC & central repository | | Δ Refine process for UAT, conversions, upgrades | |
| Test Estimation | Δ Bottom-up estimation for VisionPlus | | Δ Estimation for enterprise apps, finance and Triad | | |
| Types & Levels of Testing | Δ Augment team skills | Δ Independent system testing | Δ Triad testing | Δ Finance UAT | |

A Clear Path Forward: the Benefits of TPI® and Quality Blueprint

This business-driven approach to improving your testing process provides several significant benefits:

- Clear and improved insight into your testing maturity—in comparison with your industry peers, as well as understanding the strategic value of testing within the overall quality assurance of your systems' development and configuration;
- A clear roadmap to improvement—an inclusive program that optimizes, structures, and refines your approach to testing;
- Test processes aligned with your key business drivers—80% of users report that TPI® provides very good ROI, strengthening quality and agility in line with business goals;
- Increased productivity and reduced time-to-market—automation and repeatable processes reduce the time it takes to test software and applications;
- Access to a wealth of industry best-practices and experience—Innovation Labs, knowledge-sharing, and the support of an expert team will ensure that you have the tools and skills to accelerate the implementation of your testing strategy;
- Minimized risk—using proven frameworks to provide regulatory compliance, particularly relevant in financial services, telecoms, pharmaceuticals, and government.

Additional services we can provide:

- Quick Scan—a condensed assessment offering rapid insight into your test process quality and prioritizing short-term actions for improvement;
- Training—customized courses for embedding improvements in your business;
- Consultancy—expert and objective advice on the best ways to prioritize and implement improvement activities, as part of a wider, ongoing strategy.

Assess. Understand. Improve.

Our Test Process Improvement and Quality Blueprint service will give you a detailed assessment of your current testing process maturity and a clearly defined road to improvement.

With a clear understanding of where you are now and how you want to proceed, we can help you implement the steps that will achieve greater consistency in quality, greater control of test execution, and improved cost savings.

This process of improvement is not a one-off solution but an iterative, repeatable approach, enabling you to really optimize your testing performance. Establishing the sound foundations for short- and long-term improvements, using TPI® and Quality Blueprint, will ensure that your applications and services operate to their full potential at all times.

A Client Example

A leading credit bureau faced numerous challenges relating to budget allocations, resource skills, and process inconsistencies in their QA department. Using our TPI® and Quality Blueprint framework, the client was able to improve their test maturity and beat industry benchmarks within two years. Their centralized and decentralized test organization now uses well-defined reporting mechanisms and is supported by a vibrant, positive test team culture.

About Capgemini and Sogeti

The Capgemini Group is one of the world's foremost providers of consulting, technology and outsourcing services, enabling its clients to transform and perform through the use of technologies. Present in over 30 countries, the Capgemini Group reported 2009 global revenues of EUR 8.4 billion and employs over 90,000 people worldwide. Sogeti, its wholly-owned subsidiary, is a leading provider of local professional services, bringing together more than 20,000 professionals in 15 countries and is present in over 200 locations in Europe, the US and India.

Together, Capgemini and Sogeti have developed innovative, business-driven quality assurance (QA) and testing services, combining best-in-breed testing methodologies (TMap® and TPI®) and the global delivery model, Rightshore®, to help organizations achieve their testing and QA goals. Capgemini and Sogeti have one of the largest dedicated testing practices in the world, with over 6,400 test professionals and a further 11,000 application specialists, notably through a common center of excellence with testing specialists developed in India.

Contact

For more information about how Capgemini and Sogeti's Testing Services can help organizations achieve their testing and QA goals, please contact your local Capgemini or Sogeti testing representative or our Global Testing Services Sales Team:

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