



## Need for a Comprehensive Test Maturity Model



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### Abstract

Constant change and ever growing complexity of business has necessitated that IT organizations and specifically Test/QA organizations make thorough and periodic introspection of their processes and delivery capabilities. This is necessary to ensure that at all possible times the Test/QA organization, and its systems and processes, are relevant and available to support business needs. While there are multiple maturity models in the marketplace to help this process, there are yet not comprehensive enough and fail to provide today's dynamic businesses the much needed flexibility and power of customization. The need of the hour is a comprehensive Test/QA maturity assessment model, which not only answers the requirements of customization and flexibility, but also ensures relevance in today's complex delivery structures of multi-vendor scenarios, multi-location engagements, global delivery models, etc.



## The global economic crisis

and revolutionary technology trends have changed the role of IT organizations in supporting business growth. Though the recession created a scarcity of capital for IT investments, the demands and expectations on the ability of IT to quickly adapt and support business, has only increased multifold. In addition, rapid/revolutionary changes in technologies are forcing companies to recast their entire IT landscape. All these factors together have created a complex environment where the demand for change from the business is high, the capital for investment is scarce and time-to-market is critical to success.

The constant change and ever growing complexity of the business environment, and the risks associated, have necessitated that organizations make thorough and periodic introspection of their processes and delivery capabilities to ensure operation in an efficient, effective and agile manner. A key requirement, amongst all, is the ability to ensure that there are adequate controls in place to ensure quality in the processes and the outcomes, no matter the extent of change being introduced in business or technology landscape of the organization.

This is where the Test/QA organization's capability comes under the scanner. An

organization's ability to assure and control quality of its IT systems and processes largely determines the success or failure of the business in capturing, servicing and expanding its client base. When Quality and reliability play a very significant role in determining the current and future course of business outcomes delivered, it is imperative that the Quality Assurance function itself is evaluated periodically for the relevance, effectiveness and efficiency of the processes, practices and systems. An objective self-introspection is the ideal first step. However, most often than not, QA organizations fall short of using this process to unearth gaps in their current systems and practices. Also, many organizations may have lost touch with the ever-evolving world of QA to be aware of the leading practices and systems available today. This necessitates an independent assessment of the organization's QA practices to benchmark it against the practices prevalent in the industry and to get that all-important question "where do we stand in comparison with Industry standards?" answered. Also, the assessment of maturity in testing processes becomes critical in laying out the blue-print for a QA/testing transformation program that would establish the function as a fit-for-purpose one, and often world-leading.

# 1

## Limitations of traditional approaches to Test/QA Maturity Assessment

There are several models, proprietary and others, available for assessing the maturity of the IT processes and systems, including quality assurance. Most of these are developed and promoted as models helping an organization to certify capabilities in one or more areas of the software development lifecycle. Like all other models and frameworks that lead to certification, these maturity models too have a fixed framework for an organization to operate within, and provide very little flexibility to address specific assessment needs. Further, these models fail to help organizations assess overall process maturity due to the following limitations:


### Inability to accommodate and account for heterogeneous delivery structures

Over the last decade or so, most organizations have evolved into a heterogeneous composition of internal staff and service providers, delivering services through global delivery models with diverse talent, disparate processes, etc. All this has made assessing an organization's process maturity increasingly difficult. The existing maturity models in the marketplace are not flexible enough to accommodate for these complex

delivery structures created through multi-vendor scenarios, multi-location engagements focusing on selective parts of the software development lifecycle, etc. This significantly reduces the overall effectiveness of the output provided by the existing maturity model and its applicability to the client situation.

### Focused on comprehensive certification rather than required capabilities

Most conventional models are "certification focused" and can help organizations in assessing their IT process capabilities and getting certified. They are exhaustive in the coverage of process areas and answer the question, "how comprehensive are the processes and practices to service a diverse sets of users of the QA services?". Such a certification is often a much needed qualification for IT service provider organizations to highlight their process capability and maturity to diverse clients and prospects. However, most non-IT businesses maintain IT divisions to support their business and are more interested in selectively developing the required capabilities of their respective IT groups, leading to efficient business processes and better business outcomes. Hence



the focus of maturity assessments in these organizations is not certification, but the ability to deliver specific business outcomes. Since the traditional assessment models are often certification-focused, most non-IT businesses find it an overhead to go through an exhaustive assessment process that does not help them answer the question, “how effective are my organization’s QA processes and practices to ensure quality of my business outcomes?”

### Staged Vs Continuous model for growth in maturity

Majority of certification models follow a staged approach, which means that the organization has to satisfy all the requirements of a particular level and get certified in the same, before becoming eligible for progress to the next level. But, most organizations are selective in their focus and want to develop those areas that are relevant and necessary to their business, rather than meeting all the requirements just to get certified at a particular level. Because of the staged

approach to certification, such maturity models do not present organizations with a good view of where their current capabilities stand with respect to what is needed by the organization.

### Lack of focus on QA

The existing maturity models primarily focus on software development, and treat testing as a phase in the Software Development Lifecycle. However, today, testing has evolved as a mature and specialized discipline in the software industry and hence the ability of the traditional models to assess the QA/testing processes and practices to the required level of detail is very limited. They fall short of organizations that have realized the need/ importance for an independent testing team and want to manage the QA maturity mapping process as an independent entity. Hence, the various dimensions of the test organization should be given adequate focus in the maturity assessment approach covering the Process, People and Technology aspects of testing.

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## A comprehensive model to assessing an organization's test capabilities and the ability to handle transformational programs

Now that we have looked at the shortcomings of the traditional models of QA assessment, it is time to answer that all-important question, "what should a comprehensive model for assessing QA/Test maturity be like?". The key attributes of a comprehensive QA/Test assessment framework/model can be summed up as follows:

### Provide business-comprehensible decision-aiding results

The model should allow for selective assessment of the relevant parameters for maturity, in the context of business. The results of the assessment should help the business identify and plot the possibility of immaturity in their systems and processes, using lead indicators that have a negative impact on the business. These indicators should help the senior management to decide whether to go for a detailed assessment of maturity, before any adverse effect on business is felt.

### Choice of business-relevant factors and focus areas

The model should be flexible enough to provide the right level of focus on the various factors, business deems relevant, that contribute to the overall maturity index. For example, an organization

which depends on one or a set of service providers for their key IT services may want strong governance and gating mechanisms. While, another organization that does testing in-house, and leverages vendors for development, will have a much wider focus on maturity in processes and practices. Basically, the model should be flexible enough to account for the intent of assessment, as outlined by the organization.

### Detailed and comprehensive view of areas of improvement and strengths

The model should also be one that helps determine the maturity of the testing organization in a detailed manner. The methods and the systems of the model should provide a robust mechanism of objectively calculating the maturity level of the testing organization, based on the behaviors exhibited by the organization. It should provide the members of the QA organization with a detailed view of the areas of strength (and hence to be retained) and the areas of improvement. The model should enable the testing organization to understand the measures that should be implemented at the granular level, rather than at a high-level and thereby help the organization to focus on their key QA dimensions,



and strengthen the maturity of these dimensions.

### A frame of reference for improvement initiatives

The comprehensive maturity model should provide the organization with a roadmap to move its QA/Testing processes and practices to a higher level of maturity and

effectiveness. It should provide a reference framework for selective improvement of capabilities, keeping in mind the business context and organizational objectives. This will help the organization design a roadmap for improvement and devise ways to implement the same effectively.

# 3



## Conclusion

So, in order to meet the needs of a dynamic business environment and rapidly evolving technology space, IT organizations need to respond quickly and efficiently with high-quality, high-reliability and cost-effective processes and systems. This calls for a robust and scalable QA organization that can guard and ensure the quality of solutions that are put into operation, and assess itself on its capabilities and maturity, periodically to ensure business-relevance and effectiveness.

Hence a comprehensive QA maturity model, which assists organizations in

this assessment, should move away from certification-based models with “generic” and “hard-to-customize” stages, to a model that is adaptable to the context in which business operates. It needs to be a model that evaluates factors that influence maturity and quality of processes at a detailed level and helps the organization to embed quality and maturity in processes, governance and development of key competencies. This would help ensure the maturity of operations and promote continuous improvement and innovation throughout the organization.

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Reghunath Balaraman is a Principal Consultant, and has over 16 years of experience. A post graduate in Engineering and Management, he has been working closely with several large organizations to assess the maturity of their test and QA organizations and to help them build mature and scalable QA organizations. Raghunath is also well versed with several industry models for assessing maturity of software testing.

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