



# Test Process Improvement (TPI®)

– A step-by-step guide for improving your test process

How good is your test process? This seemingly easy question is actually hard to answer. Testing often can be a troublesome and uncontrollable process. It takes too much time, costs a lot more than planned, and offers insufficient insight into the quality of the test process – possibly putting the quality of the information system being tested and business process itself at risk. So what is the solution to this business challenge?

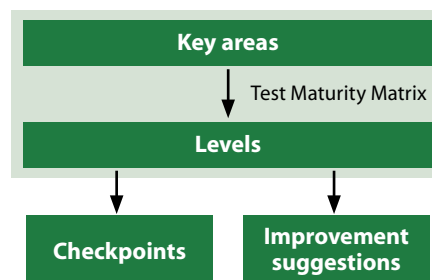
## Improve your test process

Many organizations realize that improving the test process is essential for ensuring the quality of the information system and the overall business process. However, in practice, it's often challenging to define the steps required to improve and control the process, and in what order. This is similar to the improvement of the total software process, where models like the Capability Maturity Model® (CMM) offer support.

## The TPI® model

The Test Process Improvement (TPI®) model was developed based on Software Control and Testing knowledge and experience. The TPI® model supports the improvement of test processes, and offers insight into the "maturity" of the test processes within your organization. Based on this understanding, the model helps you to define gradual and controllable improvement steps.

The model is depicted as follows:



*The TPI® Model*

TPI® considers the different aspects of the test process, such as the use of test tools, design techniques or reporting. By evaluating various aspects, the strengths and weaknesses of the test process become clear. These aspects are called the key areas. The TPI® model has 20 key areas. To gain insight into the state of the key areas, the model offers levels (from A to B to C, etc.). The levels increase based on time (faster), cost (cheaper) and/or quality (better).

For example, for the key area Reporting, the levels are:

- a) report defects found,
- b) report on the progress of the test process,
- c) define risks for the system and provide recommendations, substantiated by metrics and
- d) provide recommendations that have Software Process Improvement characteristics



All levels and key areas are related to each other in a **Test Maturity Matrix**. This provides a good way to define the internal priorities and dependencies between levels and key areas. In the matrix, each level is related to a certain scale of test maturity. This results in 13 scales of test maturity.

Key Area	0	1	2	3	4	...	13
Test strategy	A						
Life Cycle	A		B				
Reporting	A			B			
etc.							

*The Test Maturity Matrix*

The key areas, levels and matrix are used to identify the strengths and weaknesses of the current test process, and to help define actions for improvement. Filling in the matrix makes it easier to evaluate the improvement proposals. The matrix works from left to right.

The requirements for each level are defined in the form of **checkpoints** – questions that need to be answered positively in order to qualify for that level. These checkpoints make an objective classification by level possible.

Improvement actions can be defined in terms of desired higher levels. Checkpoints help determine the actions required to achieve a higher level. Additionally, the model offers **improvement suggestions** to support test process improvement, which include a list of tips and ideas that can help in the effort to achieve the desired level.

### The Tool

You may have the impression that using the TPI® model automatically

results in an effective analysis of the current and required situation. This is not necessarily true. Instead, the model should be viewed as a tool for improving the test process and facilitating effective communication.

Improvement of processes demands a high degree of knowledge and expertise. Specialists are needed in the areas of testing, the organization and the change process itself.

### Why Sogeti?

With over 1,000 professional testers in Europe and the USA, Sogeti's Software Control (SC) offers the required knowledge and experience in testing and the improvement of test processes. SC experts can help you in all phases of the change process, from the definition of the goals and scope, the analysis of the current situation, the definition of improvement actions up to and including the implementation of the changes.

### Our Service Offering

For TPI®, our Software Control experts can support you with:

#### *Execution of TPI® assessments*

An *assessment* entails an analysis of the current and desired state for the test process. The strengths and weaknesses of the current test process are described in an assessment report, including the related test maturity. In addition to a description of the desired situation, the report includes short and long term improvement suggestions, and a framework for the implementation.

A *quick scan* is a short version of the assessment. A quick scan offers fast insight in the quality of the test process. The most important short-term improvement actions are specified in the report.

The support that Software Control provides depends on your unique needs. Support varies from managing the improvement process to providing consulting on the delivery of the improvement activities.

### Improvement is necessary

In today's business environment, developments occur at a very fast pace. The developers' productivity is continuously increasing, and clients are demanding even higher levels of quality. Even if your current test process is satisfactory, this process will need improvement in the future. The TPI® model and Software Control can help you to achieve this goal.

### Want to know more?

Your local Sogeti representative can provide you with more information about Sogeti, TPI® and our related services. You can also visit [www.sogeti.se/tpi](http://www.sogeti.se/tpi).

### Literature

Koomen, T., Pol, M., Test Process Improvement a practical step-by-step guide to structured testing (2001), Addison Wesley, ISBN 0-201-59624-5

### About Sogeti Sverige AB

Sogeti Sverige AB is a consultancy specializing in local professional IT services. Geographically located close to the local technical decision-makers of large companies, we are present at 18 Swedish locations with a total of about 650 employees. We offer our clients a full range of technological IT knowledge and expertise. Sogeti Sverige AB is a part of the Sogeti-Transiciel Group, owned by Cap Gemini S.A., listed on the Paris Stock Exchange. For more information, please visit [www.sogeti.se](http://www.sogeti.se).