Test Management Approach

– Structured testing according to TMap®

In today's challenging business climate, organizations are focusing more on getting maximum business value from their software. Consequently, rapid delivery and software quality continue to become more important, and the risks of insufficient software quality greater. Testing is one of the most important actions an organization can take to control these risks.

Why testing?

Testing provides insight into the quality of the software and the risks associated with insufficient quality. Based on this insight, organizations can make informed decisions about whether to take software into operation. With proper testing, organizations can make better decisions and effectively manage risk.

Sogeti's Test Management Approach (TMap®) can help you to deliver more complex, excellent quality software, faster.

Structured testing

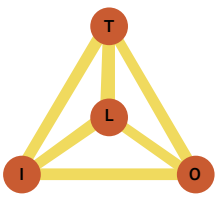
Sogeti recognizes that a well defined and structured test process is vital for effective testing. A structured test approach offers you the following advantages:

- Comprehensive insight and advice about the risks associated with software quality
- A transparent test process that is manageable in terms of time, cost and quality
- A proactive test process, which provides early warnings when product quality is insufficient
- The ability to find defects at an early stage
- The ability to prevent defects
- A shorter testing period on the critical path of the total development cycle
- Re-use of test process deliverables (such as test scripts and test cases)
- Consistency and standardization – all people involved will speak the same test language

Four cornerstones

TMap® is based on four cornerstones:

- a Life cycle of test activities consistent with the software development life cycle (L),
- sound Organizational embedding (O),
- the right Infrastructure and tools (I) and
- usable Techniques (T).



The four cornerstones of a structured test process

The Life cycle cornerstone describes the activities that need to be performed at specific stages in the test process.

The Organizational cornerstone features two key components: the 1) the test team organization, where everyone must be given tasks and responsibilities, and 2) the incorporation of the test team into the project organization.

The Infrastructure cornerstone specifies that the proper infrastructure and tools are required to achieve optimum results. The "test environment" must be stable, controllable and representative. Also, the use of tools to make testing more efficient is essential.

The last cornerstone deals with the Techniques for supporting the testing process - for defining a risk- based test strategy, supporting the planning process, studying and reviewing the test basis, specifying test cases, and reporting. Techniques help facilitate a structured and repeatable execution of activities.

To achieve a well-structured test process, the specific contents of the cornerstones should be in balance. The Life cycle cornerstone is central to the other cornerstones – each phase in the testing life cycle requires a specific organization, infrastructure and techniques.

TMap® is built on the premise that testing is more than performing test cases behind a computer screen. It is essential to plan and prepare for testing activities early in the process, before actual test execution. This allows the test process to be on the critical path of a project for as short a time as possible.

The TMap® life cycle

The TMap® life cycle consists of the following phases:

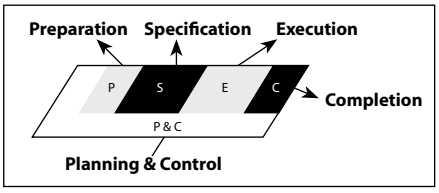
- Planning & control
- Preparation
- Specification
- Execution
- Completion

The Planning & control phase involves the creation of a test plan, which defines the "who, what, when, where and how" of executing test activities. During the test process, the client receives frequent updates about the product quality and risks through periodic and ad-hoc reports.

The Preparation phase features determining whether the (written or unwritten) software specifications are of sufficient quality to achieve successful specification and execution of the tests.

The Specification phase involves specifying the test cases and setting up the infrastructure. Immediately after the test object is delivered, the *test Execution phase* starts. During this phase, there is an analysis of any differences between the predicted results and the achieved results and, if applicable, resulting defect reports.

The Completion phase consists of conserving the test materials for future re-use, creating a final report and evaluating the test process for better control of future test processes.



The life cycle model

TMap® offers a way to achieve an effective and efficient test process, enabling your organization to achieve key business objectives. Effective, because it focuses on finding the important defects in time and in direct relation to the product risks. Efficient, because it is a universally applicable method emphasizing re-use, with a risk-based strategy that assumes you should make intelligent choices about what to test and how thoroughly to test it, rather than testing everything.

TMap® offers a complete and consistent, yet flexible approach, which is suitable for and used by organizations of all sizes in a variety of industries such as government, finance and IT. TMap® is also designed to address differences in applications, featuring the following variations: descriptions of how to apply the generic method of TMap® to specific situations like testing embedded systems, web applications, applications developed with iterative development methodologies like DSDM® or RUP®, testing in maintenance, and so on. TMap® offers you the flexibility to create a tailor-made test approach for your specific situation.

TMap® services

TMap® has been a standard for testing in Sogeti for many years, and we have a complete portfolio of references available. With the publication of the English version in 2001, TMap® is quickly gaining popularity around the world. Sogeti's R&D department continuously develops, refines and maintains the TMap® products and services. These activities are based on the demands and needs of our clients. We consider the exchange of knowledge and experience to be vital. In addition to sharing this knowledge and experience internally within Sogeti, we regularly publish our experiences and views in the public domain. Several other methods have been developed using TMap® as the basis. All of these methods can be used separately, or together as part of an integrated solution. Some examples:

- TPI®, a model for step-by-step improvement of the test process
- TAKT, the approach for test automation
- TMap®Factory, how to implement the test process in a permanent test organization
- TEmb, testing embedded systems

Sogeti publishes books in English, Dutch, German and, most recently, in Japanese and Chinese. Sogeti and its partners offer workshops and courses on TMap® (and related testing topics) in several countries, and in several languages. We also present our testing views at international test and quality conferences. Our experienced professionals can provide practical guidance to teach your organization how to set up and perform a structured test process. We also offer complete outsourcing capabilities to manage your test activities.

Want to know more?

Your local Sogeti representative can provide you with more information about Sogeti, TMap® and our related services. You can also visit www.tmap.net or www.sogeti.se/tmap.

Literature

Pol, M., Teunissen, R.,Veenendaal, E. van, Software Testing: A Guide to the TMap® Approach, (2002), Addison Wesley, ISBN 0201745712