360° Quality: Functional quality is not enough

Dr. Frank Simon
Software Quality Systems AG
SQS Research & Innovation
Stollwerckstraße 11
51149 Cologne
frank.simon@sqs.de

Most surveys about the success rate of IT-Projects demonstrate very dramatically that there is still missing a silver-bullet for doing large IT-Projects in time, in cost and in quality. Neither new techniques and tools nor new processes are increasing the success-rate. Instead of improving single steps within the Application Lifecycle it should be tried to change the general view on an IT-project. The idea is to have a very holistic view on project success, like already established in the context of quality management since many years. Understanding quality as “the characteristics of a product or service that bear on its ability to satisfy stated or implied needs” quality in general can be modelled like in the following Figure.

Corresponding to this model an IT-project depends on the following two factors: a) Holistic and systematic consideration of all needs and products/services as well as b) continuous transparency about the degree to which characteristics fulfil the needs.

Holistic View

Looking at the reasons for failed IT-projects one interesting fact is that needs/requirements can not be reduced to functional requirements in today’s projects. If such a mono-dimensional view on quality is used there exist many high project risks. Typical quality aspect relevant for today’s IT-Projects are:

- Maintainability: Most activities around an IT-System are understanding, analysing,
modifying and extending it. To enable these activities it is very important that the sys-

- License Compliance: To reuse existing source-code-snippets, libraries and frameworks
is state-of-the-art for today’s software development. Unfortunately there exist many
licensing aspects that have to be considered when doing so. Ignoring this aspect can
immediately stop every project. This is particular relevant when reusing components
under the Gnu General Public License (GPL).

Another type of holistic view has to consider, that software can not be reduced to the de-

- Transparency

To have a continuous transparency
about the degree to what the holistic
requirements are fulfilled it is helpful to
see an IT-Project as a typical
engineering discipline: The most
important characteristics of doing so is
to have a systematic approach, to work
in a very disciplined way and to
concentrate on measurable check points.
All of them are fulfilled by the so called
Y-Model (see Figure), handling with
control objects and control attributes to
have a holistic view on the project.
Control indicators based on control
metrics ensures a high potential for
automation and makes sure that the
generated view is objective and repeatable.

Software Quality Systems AG

The SQS AG is the world-market-leader in the area of quality management and testing.
SQS has about 1,500 employees and about 150 Mio. revenues and knows about all
relevant control-points and how to check them continuously as early as possible. For real
projects SQS hosts an experienced set of Best-Practices to make IT-Projects successful.

Frank Simon is the head of the SQS-Research & Innovation Group that has the task to
maintain and update the set of experienced Best-Practices as well as to work on new ser-
vices like model-based testing or architecture-verification.