Invited Keynote: Software Quality Management – quo vadis?

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Software engineering as a discipline startet end of the sixties as answer to the "software crisis" – the term "software quality" wasn't even used. Since then, it took nearly additional 30 years to establish a normative software quality management with ISO 9000-3 in 1997, the particular "interpretation" of the general ISO 9000 from 1994 for software development organizations. At the same time, often driven by governments and military as largest IT sponsors, procedure models like the German V-Modell '97, the spriral model and somewhat later the Rational Unified Process have been developed, accompanied by assessment models like CMMI or SPICE. Nowadays, there's no successful software company on the market without defined procedure model and/or a CMMI or SPICE maturity level 3, and suppliers for governments or big companies are only accepted for bidding if they are certified against one of these standards.

Though, there seems to be still no significant change in the yearly Chaos reports, there still dramatically fail software projects – or even running software - what's wrong, the sensation or software quality in reality?

The talk comprises the last 20 years of software quality management from the view of a software engineer and quality manager in medium and big software development organizations, comparing the hidden impact of changing organizational behaviour and structures on software architecture and quality – and vice versa.

Facts and hypotheses on the following topics get discussed:

Get requirements constrained by natural laws better implemented than those constrained by social contracts (i.e. business processes)?

Is there any empirically proven impact of the number of transformation steps (between informal requests and requirements in natural language to the final compilation into hardware language) on software quality – and its cost?

Which promising areas for software engineering research can be seen in the realm of very large IT systems?

For the latter, practical examples and experience from the biggest IT hub of a global bank is shown for topics like

- evolution of a large application landscape
- organizational impact on software architecture
- the way from spaghetti to tagliatelle to letter soup and: what's the soup?
- pitfalls in global distributed software development and operations
- the common ground of quality management, business analysis and enterprise architecture.

The talk concludes with observed gaps in the education curricula for software engineers and managers.

Carl Worms is enterprise architect in Credit Suisse IT Private Banking with focus on strategy and governance of solution delivery processes. Since 1991, he worked in several large enterprises in the areas of software engineering methodology and software quality management. In 1993 he got the Walter Masing Award of the German Society for Quality with a paper on object orientation and automated testing. He joined Credit Suisse IT architecture in 1999 as leading methodologist and led the first software process improvement program from 2002-2005. In 2006-2008 he was head of the IT Private Banking Quality Management unit and since 2008 is lead architect of this unit. (In November 2010 Credit Suisse IT Private Banking/Region Switzerland became one of the largest IT organizations outside India on CMMI DEV maturity level 3.)