# Preface

Software and systems quality is playing an increasingly important role in the growth of almost all organisations, both profit and non-profit. Quality is vital to the success of companies in their markets. Most small trade and repair businesses use software systems in their administration and marketing processes. Every doctor's surgery uses software to manage patients' records. Banking is no longer conceivable without software. Aircraft, lorries and cars use more and more software to handle their increasingly complex technical systems. Innovation, competition and cost pressure are always considerations in ongoing business decisions. The question facing these organisations is how to achieve the right level of quality of their software and software-based systems and products; that is, a level the market will reward, a level that mitigates the organisations' risks and a level the organisation is willing to pay for.

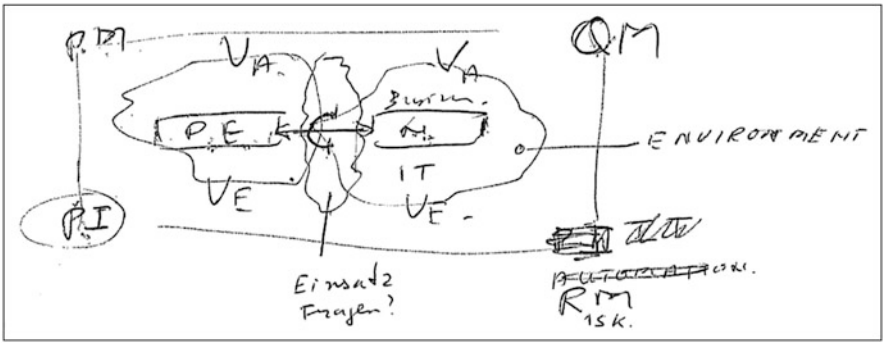
As in all industries, the software industry is subject to change driven from many fronts. New business models are created in response to new demands from different markets. New business processes are defined or existing business processes are adapted to changing business models. New solutions are built as new technologies become available. The changes in business and daily life but also the changes in the complexity and integration of software and systems are increasingly far-reaching. We believe that these changes have a huge impact on the art of development but also result in improved quality governance, quality management and quality engineering. It is not sufficient to define quality by budget and time.

The increasing integration of software as well as the search for suitable supply chain models in the life cycle requires appropriate quality solutions. Major sources for improving effectiveness, efficiency and reliability are re-use, standardisation, automation and specialisation as part of the industrialisation paradigm in the software industry. The rapid evolution of requirements due to new experiences, competition and cost pressure, but also changing technology such as mobile devices, has increased pressure on the software industry and its products. Likewise, there are impacts from new regulations issued by public and private authorities like Basel III, from a wealth of data and information overflow for users and providers

and last but not least from new paradigms in the software industry itself like Agile development, which again pushes new and changing requirements.

For many decades software has occupied two different worlds: the "Embedded World" and the "ICT World" (ICT ≡ IT; although for the scope of this book, our preferred term is ICT). In our experience these two worlds behave differently in how they address the quality of the corresponding artefacts and final results. This book challenges this view and openly asks whether this coexistence and strong separation of techniques and procedures have a place in a future where globalisation leads to more integration and interoperability of formerly uncoupled or loosely coupled systems. What can we learn from both worlds and how can we apply best practices to improve enterprise ICT quality?

Although a number of good practices are in place, there is still room for major improvements. In our view, a holistic approach for systems and software quality is missing in ICT quality. Strategies and frameworks are required that will produce the kind of software and systems we need and we are willing to pay for. Let us therefore look at the two worlds of "Embedded systems" and "ICT systems" and learn from both worlds, from overlaps and individual solutions. Now is the time to take the next step for industrialisation in the software industry. With the aim of integrating a product and project oriented view on the ICT world, we will focus on three concepts in this book: (1) right software and systems quality; (2) industrialisation of quality engineering and (3) a holistic approach to enterprise ICT quality. As far as we are concerned, "Alea iacta est"—the die has been cast.





http://www.springer.com/978-3-642-39970-1

Systems and Software Quality
The next step for industrialisation
Wieczorek, M.; Vos, D.; Bons, H.
2014, XXXII, 177 p. 108 illus., 102 illus. in color.,
Hardcover
ISBN: 978-3-642-39970-1