

Geleitwort zur 1. Auflage von Dave Parnas

One of the biggest problems in the computer software field is the ability of inadequately qualified people to enter the profession and practice software development without limits. Software has become critical to our society; it is embedded in many devices that we count on, devices such as telephones and banking machines. Nonetheless, many of the people who write that software have not been educated for the job and have never demonstrated their qualifications to any objective professional body. There is no other field in the world where people without approved education can decide to identify themselves as “Engineers” and produce products that are essential to the safety and well-being of the public.

Software is well known for low reliability and lack of trustworthiness. In part this is attributable to the difficulty of dealing with the complexity of today's software systems, but the inadequate knowledge, skills, and professionalism of many of the practitioners also contributes to this problem. Moreover, we can thank the inadequately qualified people who produced today's software for the unreliability and complexity of the products that serve as support software for new products.

Our educational institutions have failed the public in this field. They have not recognized that those who study Computer Science require a professional education, one similar in style to the education provided to those who study medicine, law, or engineering. In those fields, the curriculum is designed around a set of professional requirements. Students are told what they must learn, rather than allowed to learn what they feel like learning. In the software field, universities have allowed the contents of courses to depend on the whim of the instructor, and the choice of courses to be largely up to the student. As a result, when an employer or client meets a graduate of a Computer Science programme, only experienced software developers are able to judge whether or not a graduate has the knowledge and skills needed for the job. Often, we cannot even find a graduate who has the appropriate body of knowledge and experience.

This problem is quite clear in the area of software testing. Many new employees are assigned testing duties without any knowledge how to design tests, how to evaluate test results, and how to draw valid conclusions can be drawn from the test results. Fortunately, there is now a useful international initiative to establish national Testing Boards, which will approve courses of instruction and issue certificates to those who are able to demonstrate their understanding of basic terms and procedures in testing.

Unfortunately, this is still a shortage of appropriate study material for people who would like to become better software testers and pass the national tests. This book, “Basiswissen Softwaretest” by Spillner and Linz, fills this gap by providing a well organized and complete view of what is

known about how to test software. It provides an essential component of the international effort to establish standards for software professionals and then help people to become fully qualified software developers.

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June 2002

Geleitwort zur 1. Auflage von Martin Pol

For many organisations the quality of the software systems is becoming more and more important. Increasingly, all kinds of measures are taken to achieve quality. Despite encouraging results with various quality improvement approaches, the IT industry is still far from achieving zero defect software. That notion, unfortunately, will remain utopian for some time. The design process is still essentially a craft, difficult and hard to complete without making defects. The causes of defects are therefore varied and unpredictable, and, for the time being, it will still be necessary to devote a great deal of energy to tracking down these defects. Testing will remain an important activity within software development and maintenance, often taking more than 30 - 40% of the total budget.

Testing is not merely a phase which comes after system development but has become an activity comparable to system development that must be taken seriously. Computer science has gradually adopted the general idea of testing as a process of planning, preparation and measuring aimed at establishing the characteristics of an information system and demonstrating the difference between the actual and the required status. Since quality can be defined as 'meeting the requirements', testing therefore results in recommendations on quality. It consequently provides an insight into the risks that will be incurred if a lower quality is accepted and this is also the principal objective of testing.

Since time-to-market, competition, globalisation and the quality of services, including the quality of software systems, have become a serious condition to survive for many organisations, the need for an adequate test process is becoming increasingly important. Both the increasing importance of software in the society and the costs that are involved in testing, confirm the need for a well-structured and reliable test process within the development process. A structured test approach, organisation and infrastructure are necessary.

This book provides the basics to set up and carry out a well-structured test process, by describing the principles of testing, testing throughout the

development life-cycle, test techniques, test management and test tools. Therefore it's relevant to anyone who's involved in the information technology: developers, testing staff, users, project- and operations managers, etc. Besides, this book is an important reference book to prepare for the ISEB certification programme. For either purpose, I am sure this comprehensive book will prove to be very useful.

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June 2002

Geleitwort zur 1. Auflage von Dorothy Graham

What makes a good certification scheme for professional people? There are three primary objectives for a successful scheme:

- there is a basic understanding of the subject matter
- it provides value to those who gain the certificate (and their employers)
- it is fair to all concerned, independent of vested interests

This book supports a scheme for software testers which meets these objectives. The subject matter, software testing, is well enough understood to provide an agreed basis for a foundation level certificate. The new German ASQF scheme and the successful ISEB scheme in the UK will soon be extended internationally. I believe that the key reason for the success of the UK scheme is the independence of the accrediting and examining body, as described below. I also believe that this philosophy will ensure the success of the international scheme for certified testers that is now being pioneered in Germany.

There are two aspects to independence: accreditation of training providers and examination of individual candidates.

What is the difference between certification and accreditation? Certification applies to individuals; accreditation applies to training organisations. An individual person receives a certificate for demonstrating his or her knowledge of a subject area. Their knowledge is developed through on the job experience but also through training courses in the subject. When there is an agreed basis for the knowledge (a syllabus or a "body of knowledge") then an independent body can assess courses provided by a number of training providers - this is accreditation. Accreditation gives confidence that the training conforms to a standard of content and admi-

nistration. If training providers accredit themselves, this has little value; accreditation by a recognized independent body has far more credibility.

In order to award a certificate, the candidates need to take an exam based on the agreed syllabus. If this exam is set, monitored and marked by an independent body, then there is an equal "playing field" for all candidates (and all training providers). The independence of the examining body gives the certificate awarded to the passing candidates far more value.

There are some schemes where training providers are self-accrediting, and exams are set by the training providers. Although these schemes do provide some value, an independent scheme is better. Those who oppose all certification schemes are very aware that there can be problems with all such schemes, which is true - no scheme will be perfect. However, I believe that an independent scheme such as ISEB, ASQF and the planned international scheme will provide significant value for candidates and their employers.

How do we know that an independent qualification scheme will work? because the ISEB scheme is already working in many countries. ISEB stands for Information Systems Examination Board. ISEB was first formed as an independent body for qualifications in systems analysis and design. It is now part of the British Computer Society and offers qualifications in ten areas, including project management, IT service management, business systems development, data protection, information security, and since 1998, software testing. Each qualification is managed by a subject board consisting of volunteers from industry and academia. Each board also has panels to deal with specific areas; the Software Testing Board has an Accreditation Panel and an Exam Panel. ISEB staff provide administrative support for the boards and their panels, as well as distributing and marking exams (set by the Exam Panel), and engaging invigilators (proctors) to monitor candidates while they sit the exam.

The ISEB Software Testing Board was formed in 1997. The Foundation Syllabus in Software Testing was written by a working party of volunteers from the board, and the first course was run in October 1998. Since then, the scheme has been very successful, exceeding everyone's expectations - it is now ISEB's second most popular qualification (after IT service management). By mid-2002, there were 23 course providers accredited for the Software Testing Foundation course, including organisations from Germany, The Netherlands, Sweden, Eire and Australia as well as the UK. Over 8000 candidates have taken the Foundation exam in less than four years. This scheme has succeeded in raising the profile of testing and improving recognition and respect for testers. In the UK job market, it is now typically a pre-interview requirement to hold the Foundation Certificate.

What will happen next? The International Software Testing Qualification Board (ISTQB) has been formed in 2002, so accreditation and examination at Foundation level will soon be done consistently by independent bodies throughout all participating countries. Testers throughout the world will have a greater common understanding and recognition. This book is an important means of supporting this in German-speaking countries. The international certificate will provide assurance and recognition of basic testing knowledge throughout the world. This a very exciting time in software testing!

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June 2002