

Software Quality as a Differentiator

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Abstract

In the early days of computers, 1950's and 60's, software was needed to run the hardware and was given away free to sell the hardware. As the computer industry matured, applications that run on the computers became an important part of our lives from finance to defense, from health to manufacturing, and from education to entertainment. Software has become so indispensable that any problem with the software we use may cause a major disruption in what we do. Individuals and companies are ready to pay more for higher quality and dependability to run their lives and businesses. As the customers started looking for higher quality products, producers have started paying more attention to achieving higher quality. Initially, quality was attained by testing the finished product (Validation) to find nonconformities (Defects) and fixing them before usage. However, fixing such defects have proven to be very costly. It is less costly to fix defects found early in the development lifecycle by examining the output of each step of software development (Requirements, Design, and Implementation) using inspection and review techniques (Verification). In order to achieve even higher quality, in addition to finding and fixing defects, ways to prevent defects must be employed. In this presentation maturity levels of quality (QML) will be discussed similar to Capability Maturity Model (CMM), (0) Initial, (1) Validation, (2) Verification, (3) Prevention, and (4) Continuous Improvement.