Shay Walker 3/30/2019

Professor Worth - Paper #3

The definition of software quality typically has many undefined boundaries and therefore, leads to issue in maintaining quality. Software engineers sometimes are not focused on specifics and can disregard quality assurance and will then end up wasting time, money, and resources. However, there are ways for software engineers to avoid these gaps and issues in quality and construct clear and defined boundaries around their software’s quality.

Software quality assurance aims to monitor the software engineering processes to ensure the quality of the software. The end users want a product that can be implemented as soon as possible and therefore, desire a developed project in a short amount of time. They also desire the developed software to be defective in any way. In order to meet this request and keep customers happy, software development industries have devised disciplined ways to create a product that meets the end users’ requirements. However, this is not always the case and the failure to meet user requirements has cost many software products their existence and has added extra burdens and problems for their industry’s. Studies have shown that software failure is traceable to ineffective testing of the system under development (Mansor, Issues, Challenges and Best Practices of Software Testing Activity). However, testing takes time, is often very expensive to undertake, and has an uncertain rate of effectiveness. Therefore, in order to improve upon software quality new testing methods, need to be created and devised.

There are many challenges facing the area of software testing currently. One such challenge is the inability of testing to detect and uncover defects. This could be due to a multiple of reasons including but not limited to lack of testing team experience, no automated tools, and the simple lack of knowledge (Mansor, Issues, Challenges and Best Practices of Software Testing Activity). Also, methods of testing today only seek out flaws and will never admit their absence, in essence there is no testing method that can predict flaws or track future errors or defects. Another problem is the competency of the personnel testing the software. Simply not having the right people on the job can hurt a software’s quality. Lacking a testing model or framework is also another issue that presents itself within testing. This model or framework is used as a guideline for testers. As of today, there is not well-defined competence model that allows organizations to assess steps or procedures to perform testing activity (Mansor, Issues, Challenges and Best Practices of Software Testing Activity). Time consumption is another barrier to the development of software. Testing is usually allocated less than 40% of the entire time for a project while development contains over 60% of the time (Mansor, Issues, Challenges and Best Practices of Software Testing Activity). Some issues within testing occur when stakeholders lack support for testing due to deadlines. Testing cannot establish that a product functions properly under all condition but can only establish that it does not function properly under specific conditions (Mansor, Issues, Challenges and Best Practices of Software Testing Activity). This does not help stakeholders in the decisions to either release a product with error to meet a deadline or to hold and wait. Poor documentation is another challenge faced when testing software. Poor instruction leads to poor testing capabilities. These are just some of the issues faced today in the realm of software testing and ensuring software quality.

Most of the issues that are faced in software testing today can be resolved through new practices. The first practice begins to have and develop a detailed test plan and user requirements. Documentation should be neat and clearly defined so that all parties can understand what is going on. The individuals working on testing should also have a clear understanding of the software product under testing. The individuals working on testing should also be capable of synthesizing information, transmit information, and communicate both to skilled and unskilled audiences (Mansor, Issues, Challenges and Best Practices of Software Testing Activity). These individuals should be able to listen, assimilate, and communicate warmly with others. The tester should be able to manage information efficiently and to take decisions that help to deal with the risks involved within the project (Mansor, Issues, Challenges and Best Practices of Software Testing Activity). Lastly, the testers and the developers should work together to achieve a reliable software product. This is the only way that vital information can be communicated effectively between both parties and be carried over into testing. Also, greater communication and comfort communicating means that more effective and constructive work can be done once testing has begun.

Software programs have become the mediators of tasks as information technology continues to thrive. What once was done manually can now be done with these programs, thus the quality needs to meet expectations and standards. Quality software is software that meets stakeholders’ requirements and works effectively and efficiently. Testing assures the quality of software products, and more recently has been facing challenges as the demands on software development has changed. However, these challenges can be combated through a testing framework, complete clear documentation, and having the correct people testing software products. All of which can be shaped and molded to the ever-changing realm of software.

Works Cited

Alshammri, Mohammed. “Problems in Software Quality Assurance and Reasons.” *IJCSI International Journal of Computer Science Issues*, vol. 10, no. 1, ser. 03, Jan. 2013, pp. 325–327. *03*, doi: ISSN (Online): 1694-0814 .

Bourque, Pierre. “Chapter 10 Software Quality.” *Guide to the Software Engineering Body of Knowledge Version 3.0 ; SWEBOK ; a Project of the IEEE Computer Society*, by Pierre Bourque, IEEE Computer Soc., 2014.

MANSOR, ZULKEFLI. “Issues, Challenges and Best Practices of Software Testing Activity.” *Recent Advances on Computer Engineering*, pp. 42–47., doi:ISBN: 978-1-61804-336-8.