

TMMI EXPERIENCES AT KUALITATEM, A TMMI LEVEL 4 CERTIFIED ORGANIZATION

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TMMi® is the world-leading model for test process improvement. Through the implementation of TMMi, organizations can improve their test process and even become certified when they comply with the requirements. In January 2022 Kualitatem, a testing service company based in Pakistan, successfully achieved TMMi level 4 certification. Erik van Veenendaal, CEO of the TMMi Foundation, spoke with Nadia Irfan, Head of Process Excellence at Kualitatem. In her role, Nadia is responsible for the TMMi-based test improvement process. She is also an accredited TMMi lead-assessor. In April 2023, the TMMi Foundation released their 2nd world-wide user survey report. The objective of this interview and publication is to go beyond the survey data and look at a practical real-life story behind the numbers.

CAN YOU PLEASE INTRODUCE KUALITATEM?

Kualitatem is a testing service company founded in 2010 with offices in Denmark, Pakistan, Saudi Arabia, United Arab Emirates and USA and has approximately 200+ testers employed. They provide services for manual and automated testing across the various test levels. In addition, they also specialize in non-functional testing, e.g., usability and performance, and have a large portfolio in the area of security (testing). Kualitatem offers and runs many engagement models, including managed testing services and fixed price testing projects. They cover various lifecycle models and have many testers that work in an Agile mode very closely with customers.

1. TMMi is a registered trademark of the TMMi Foundation (UK)

WHAT WERE THE MAIN REASONS TO START AN IMPROVEMENT PROJECT BASED ON TMMI?



Figure 1: The TMMi test improvement model - five stages of test maturity.

The reasons for starting the TMMi-based improvement project were twofold. Externally, it was driven by marketing. The goal being, to be able to show to the market in general and Kualitatem's customers specifically that they are dedicated to delivering testing services at a high level of quality. That Kualitatem works according to the highest possible standards and is a partner that its customers can rely on. In this context being able to achieve formal certification with TMMi was very important.

Internally, Kualitatem wanted to have a standard test process across the organization and in addition work according to the best practices in the testing industry. At TMMi level 3 a standard test process across the organization is one of the main objectives. The TMMi is essentially a model based on the best practices in the testing industry. By implementing TMMi, Kualitatem wanted to become one of the "best in class" in terms of software quality, test effectiveness, test efficiency and test predictability.

WHAT BENEFITS DID YOU ACHIEVE AND DO YOU HAVE SOME EXAMPLES?

Externally, after achieving TMMi level 4 certification, this achievement is being used as a marketing tool. We explain the TMMi model and initiative to our (potential) customers to make them understand our commitment and dedication to deliver at the highest quality standards. As such we have been able to make an impression to our customers. As part of contract negotiations customers review our standard test process, templates and best practices. As always 'the proof of the pudding is in the eating', we are receiving excellent customer feedback on our projects.

Internally, having a repository with a standard test process allows easy onboarding and training of new engineers. Having the standard in place and being at this high level of test maturity also ensures adhering to our commitments in times of stress or under pressure. The end result is the ability to deliver a consistent level of quality to our customers. Over time, we have experienced a significant reduction in customer issues.

An important part of our quality system are the tailoring options. Tailoring is always needed, especially with larger unique customers whom we need to align our processes and practices. We bring best practices from TMMi to our projects which often implies that customers are "educated" on professional testing as part of the co-operation in assignments and projects. Hence the excellent customer feedback stated earlier.

Finally, our TMMi level 4-based Test Measurement and Analysis methodology, through defined key performance indicators, has helped us improve the efficiency and effectiveness of our deliveries. It also provides extensive and early insight to customers related to their product quality, enabling them to make informed decisions on time.

CAN YOU TELL US SOMETHING ABOUT YOUR APPROACH TO TEST PROCESS IMPROVEMENT AND ACHIEVING TMMI CERTIFICATION?

Similar to any other change process, management commitment is a critical success factor. In Kualitatem, we experienced strong management commitment and support on achieving TMMi certification. This enables for resources to be scheduled and available when needed in the process improvement project. We started by creating a common understanding of the, at that time, current way of working. Subsequently we studied the TMMi practices and discussed what could be the advantages to the testers and other stakeholders if we would change/improve our way of working based on them. We often improved already existing templates based on this approach.

The central process team consisted of two people, but many testing practitioners were involved throughout the improvement process. This ensured practicality of the deliverables and contributed to their level of acceptance. Upon developing new processes and practices, existing practices were always considered for re-use.

The test improvement plans were driven top-down, based on the TMMi model, but also largely bottom-up. Internal auditors periodically assessed the processes at team level determining compliance to the TMMi and identifying recommendations (improvement actions). Also project retrospectives by the teams themselves played an important role in identifying recommendations and starting improvement actions, either at team level or at organizational level.

DID YOU ADDRESS THE PEOPLE ASPECT IN PARALLEL TO PROCESS IMPROVEMENT, AND IF YES HOW?

It is important not only to have mature processes, but also to have knowledgeable and skilled testing professionals. Both are needed to make the improvement process a success. Within Kualitatem the people aspect is taken care of by Human Resource Management (HRM) that conducts performance evaluations and creates personal development plans. Based on these plans, training is organized and attended, knowledge and skills are enhanced as needed. Some knowledge areas are generic for all test professionals but there are also specialized areas such as performance testing and security testing.

Most testers are certified through ISTQB at Foundation level. There is a comprehensive training program for test engineers joining the organization. The training content covers all types of testing and is ISTQB-compliant. They are also supported to perform self-study based on the ISTQB syllabus and other available material and take the exam whereby the vast majority of them passed at their first try.

WHAT WERE THE MAIN CHALLENGES DURING THE PROCESS AND HOW DID YOU MANAGE THEM?

Two main challenges were encountered. Firstly, the teams initially perceived TMMi as "too much process", especially in the area of formally recording evidence, collecting measurement data and reporting. They very quickly started to follow the TMMi based processes and performed the TMMi practices, but felt documenting evidence and collecting data was too much. However, after thoroughly explaining its value and making it easier to document and collect data, and thus less effort was needed, the resistance was quickly removed. It now is part of the way of working and testers' habit.

Secondly, the other challenge was to use TMMi best practices and align them with various customer lifecycles to provide speedy service with



Figure 2: The Kualitatem team celebrating their TMMi 4 level certification.

high levels of quality. A critical success factor in this context are the tailoring guidelines (in practice a tailoring sheet) that are used to tune and agree on the process together with the customers. Doing this before the project starts also ensures no further discussions take place throughout the project, thus enhancing project efficiency. Kualitatem tries to bring best practices to the projects, but also has defined a minimum set of processes and practices that cannot be compromised upon when providing testing services. This approach ensures that the customer gets the required services, aligned to the client process but also utilizing TMMi best practices.

WHAT WOULD BE YOUR ADVICE TO OTHER COMPANIES DOING OR CONSIDERING TMMI?

Most importantly, in our opinion all organizations would benefit from using TMMi. However, it is essential to implement it at the right level of formality that fits with the organization and software development process being applied. It is a myth that TMMi requires detailed and huge processes. Also in our Agile project we are experiencing a lot of benefits from using TMMi. TMMi reminds us of critical testing practices that are "sometimes" forgotten in the Agile context. The best testing and thereby software quality is consistently achieved using a mature process, and this cannot be achieved through ad-hoc testing.

Choose the TMMi level that fits your (business) needs. We have learned that for us moving beyond TMMi level 3, also level 4 "Measured" has provided clear benefits. Having data allows us to better understand and control the processes and product quality. The database is now basis for improved reporting, but especially also for performing root cause analysis and removing issues from the processes.

WHAT ARE THE NEXT STEPS FOR KUALITATEM?

Kualitatem perceives business value also in achieving the TMMi level 5 "Optimization" certification. In the current improvement plan the objective is stated as achieving TMMi level 5 by the end of 2024. In addition to moving to a higher level of test maturity internally, Kualitatem also wants to market TMMi to their customers whom they often work together on projects. It would be beneficial to both if the test maturity level at customers' sites is also increased. As a result, Kualitatem is now offering consultancy on test process improvement with the objective to support interested organizations, e.g., larger customers, to achieve TMMi level 2 or even TMMi level 3 certifications.

Thank you very much for the interview Nadia, and providing us with valuable insights into the test improvement process and TMMi experiences at Kualitatem.

