



CubeMatch
Powering Change

YOU WANT WHAT?

Software Testing Opinion Paper

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TABLE OF CONTENTS

Introduction

Everything is relative!

You want what?

Can outcomes actually be achieved?

The answer is..... there's more than one way to solve a problem!

Benefits

Conclusion

INTRODUCTION

Software Testing regularly reminds this author of an old idiom – that “there’s generally more than one way to solve a problem” – insofar as in this context, that there are constant variations on a theme when it comes to the planning and execution of Software Testing from organisation to organisation and from individual to individual.

This is exacerbated further when there’s an absence of clarity in relation to confirming what an organisation really needs.

This paper aims to discuss; what organisations may want when it comes to testing, and more importantly, what they may need, and how then, these outcomes can be achieved to fulfil such needs.

SOFTWARE TESTING

EVERYTHING IS RELATIVE!

We are perpetually in search of the Holy Grail where the paths of effectiveness and efficiency in testing, can hope to exist in perfect harmony. Of course, one's perfect harmony and what that means from one organisation to another, may differ. Everything is relative! Furthermore, this isn't helped in any way when the testing requirements are unclear.

Whilst there is a welcome glint of hope and opportunity after the Covid dominated events of 2020/21, the next 12 months may well be just another year where organisations and practitioners only play the game of testing efficiency and effectiveness – without really hitting the target.

And this will remain so unless real change occurs when it comes to “nailing” testing – but this depends so much on confirming what needs to be tested and how best then to achieve this!

YOU WANT WHAT?

Let us start by asking a basic question to guide the conversation.

“What do organisations want and/or need when it comes to Software Testing?”

Sounds like a very straightforward question – but, unfortunately, the answer or answers are not always that apparent.

Is it proving code/related functionality and raising the solution to production as soon as is practicable? Maybe, it is just another hoop to jump through to satisfy quality stage gates to secure next phase funding?

Or, maybe, it is the pressure to test out a product/solution against a pre-defined timeline (that likely is enforced!) – but who cares about quality, huh?

Whilst there are many organisations who know and can articulate their requirements and objectives succinctly, and can measure success, sometimes organisations do not know what they want and are dependent on trusted advice from software professionals to successfully take them through their testing journeys and in doing so, reality must set in.

The answer, if we are honest, is probably that a combination of all these demands and considerations must be satisfied. We live and operate in the real world and not in the theoretical, where methodologies and practices are often sold as the panacea to all testing ailments. These only provide the path to testing delivery.

Real business demands will impact on testing plans and intentions - regardless of whether you are engaging in CI/CD, DevOps, SaFE, Agile, BDD or a plain old Waterfall approach, or whether you're lucky enough to have highly effective testing tools to support the effort. The challenge for practitioners is working with the business to identify what they really need, not what they want - so the former becomes the real outcome - the latter is a by-product.

There continues to be well publicised examples of software failures that show, despite the advances and investment in tooling and approaches/methodologies to testing, this still occurs. The impact is not only functional impairment or financial - reputational damage occurs also which on occasion, is irreversible. A recent report into software failures conducted by the Consortium for Information & Software Quality (CISQ) found that the *"impact of poor software quality on the United States economy referencing publicly available source material. For 2020, we estimate that figure to be approximately \$2.08 trillion"*, (Krasner, 2021).

CAN OUTCOMES ACTUALLY BE ACHIEVED?

So, how do we satisfy many masters when the goal is the same but the path to delivering that goal can be so different where quality is not compromised? Is there a solution?

As with any issue, the answer quite commonly, and it may frustrate many, is that "it all depends" - and this brings me back to the "more than one way to solve a problem" idiom mentioned earlier. There are many ways to successfully deliver testing requirements and these paths are dependent on a number of influencing factors.

1. *What are the business drivers - regulatory, new product release etc?*
2. *What is the nature of the solution to be tested and what level of risk is associated with its release?*
3. *How much autonomy does the test team have in fulfilling business objectives?*
4. *What is the Control/Provision of Budget/Appetite for spend?*
5. *What is the optimum resourcing, skills, methodology, & tooling to support the chosen path?*
6. *All /some of the above?*

There are a multitude of tools and approaches to testing available where one or quite likely, a hybrid selection may apply best. These can be utilised to ensure that adequate test coverage and test case management, test execution, and defect management occurs in the most efficient manner.

This all may appear logical and whilst there may be a strong element of “preaching to the converted” in this article, considering the likely audience, the obvious is not always such. How many times have we experienced testing happening in a project – only because it must be done – almost as a checkbox exercise? Regularly, I would surmise. How many times then have we experienced the situation where the test team was given the latitude to identify and implement the most optimum testing approach and solution in an achievable timeframe? Rarely, I suspect.

THE ANSWER IS.... THERE’S MORE THAN ONE WAY TO SOLVE A PROBLEM!

It is important, that when planning and delivering a testing solution, to remain pragmatic and practical and focus on what **must** be achieved (what the business needs) and then, what **can** be achieved and **how/what** – given the constraints involved. In adopting this approach, the following do’s and don’ts may be considered by the business and practitioners:

- **Do** allow the test team to “think outside the box” and propose innovative solutions to fulfil business objectives (the **must** to be achieved). This may include, for example, the organisation moving to approaches such as Behaviour-Driven Development (BDD) / Test-First via Test Driven Development (TDD) as opposed to a Waterfall approach - so the user interaction with the system under test is proven using business-oriented language as the starting point.
- **Do** provide some latitude to allow such innovation - as this really works. For example, a past client engagement saw the assigned test team present an alternative approach where, rather than scripting the test cases from requirements manually in Excel as was expected, the tests were constructed in simple to understand language using BDD as the approach. This not only succeeded in completing the test scripting faster than scheduled but included a greater collaboration with the business team which helped in the confirmation of what was to be tested – but earlier. At the same time then, the foundations for future efficiencies were laid via the automation of those tests via the use of Cucumber and Jenkins tools.

- **Do** ensure the right people with the right skills are in place – business and technical. The make-up of the right team will depend on the approach chosen – and this ultimately, may well be a blend of development, business, and testers.
- **Do** choose the right tools to support the quality strategy – whatever that strategy is!
- **Do** choose the right approach to suit the organisation and test team – there is no point in going down the BDD, DevOps or Agile route where the teams involved are not suitably skilled or they do not possess the key tooling just to declare “We are Agile”.
- **Do** manage expectations – do not over-promise.
- **Do not** plan backwards from a pre-imposed deadline. Whilst some deadlines such as Regulatory are decreed and are inflexible, this should not always be the case. Something always has to give way with this approach – and this continuously results in a restricted testing effort – impacting ultimately on quality!
- **Do not** accept time pressures as an excuse for failing to embed quality from the outset.

Quite often test teams are not empowered to do their job properly or allowed fully to prove that the solution meets the requirements – so paying cognisance to most, if not all of the above, can serve to improve the chances of success.

To fulfil business needs, the optimal solution lies in confirming what is the most suitable for the organisation in meeting those needs – paying attention to the challenges/constraints at hand. This can be established quite quickly by engaging in a quality review of current practices, people, skills, and tools to get to the point where the quality strategy, can be derived and implemented. Due diligence is also required to ensure that the strategy aligns to strategic business objectives.

BENEFITS

Approaching quality assurance in this manner ensures that:

- 1) *What is delivered is what the business needs in the shape of a fit-for-purpose solution – conducted in the most efficient manner*
- 2) *Test Teams are armed with the right people, right skills, and right tools to do the job asked*
- 3) *The level of risk associated with testing is mitigated to at least some extent*
- 4) *Targets are more realistically achievable and are aligned with strategic objectives*

CONCLUSION

In today's world, the pressure gauge is constantly cranked up to high when it comes to delivering testing outcomes. The asks of the test team are to do more, quicker, with less – and to achieve this while not compromising quality.

There is no Holy Grail or one answer likely, when it comes to testing – but we can help ourselves by doing things the right way at the outset. Testing methodologies, approaches and supporting tools come and go. What remains paramount though, is the business needs (not wants), as expressed in a solution that requires validation and verification before being placed onto a live footing. There are so many ways to achieve this – and this again depends on what suits best.

Methodologies, approaches, and tools should only exist to facilitate this objective. There is zero point in having the test process operating as a well-oiled machine in a vacuum - if the output does not support what the organisation really needs and is trying to achieve.

Whilst testing can be reactive, quality is a preventative activity and needs to be intrinsic from the earliest part of the solution life cycle. Testing should not be the answer – quality is the goal, where testing is confirmation of quality, or otherwise.

Finally, helping organisations understand what they really want by identifying their needs and subsequently how these are validated versus the requirements via the correct approach, right people and supporting tools - early in the testing process, goes a long way in helping to achieve this. Gaining this understanding can only aid in achieving quality outcomes in testing when the pressure to deliver remains on.

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HOW CUBEMATCH CAN HELP

• WHO WE ARE

Founded in 2002, CubeMatch is a **global change and transformation consultancy**, specialising in **Financial Services** and selected as the **chosen partner** for some of the largest and most demanding transformation projects within the Financial Services sector.

CubeMatch is an international brand continuously expanding with **six offices** worldwide : **Dublin, London, Amsterdam, Frankfurt, Singapore and Chennai**. Combining our world class expertise in Financial Services with our rich capabilities in all aspects of change and transformation, we apply a **Multiplier Effect**, helping clients to be more effective today while creating value for tomorrow.

We are **Banking Native**; it runs through our **DNA**. Unlike more general change consultancies, this banking intimacy means we deliver change and transformation programmes that stick, against a backdrop of complex regulations and continuous disruption.

Over the years, we have successfully built a global firm that is uniquely equipped to deliver pragmatic and business-focused results. We have over **150 staff and multi-million euro revenue**. And through our **strategic partnerships** we apply innovation to help organisations operate, compete and deliver at scale. Blending our powerful change capabilities with next generation technology, we deliver **innovation and business agility** to help businesses thrive.

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KEY SOURCE

Krasner, H., 2021. *The Cost of Poor Software Quality in the US: A 2020 Report* | CISQ - Consortium for Information & Software Quality. [online] It-cisq.org. Available at: <<https://www.it-cisq.org/the-cost-of-poor-software-quality-in-the-us-a-2020-report.htm>> [Accessed 9 August 2021].



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