



CubeMatch

Powering Change

SOFTWARE TESTING

Let's Get Back To Basics

Opinion paper

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INTRODUCTION

How important is software testing in proving financial services?

Seems like a no-brainer, right? I asked this very question when conducting a series of software testing surveys back in 2012/13. At that time, I was working as QA Director for a large multi-national financial product company.

The surveys polled COOs, CIOs, Project Managers, IT Managers and Quality/Test Managers. Survey participants represented insurance, retail banking, commercial banking and capital markets organisations in Ireland, the United States, the United Kingdom, and the Middle East. These organisations ranged in size from under €20 million to more than €15 billion in annual revenue.

The objective was to determine how much at that point, organisations took testing seriously - if at all and, had they learned anything from the high-profile software failures in the industry in the preceding years.

Large, well established organisations were involved - where you would hope that quality was inherently integral to any planned release or delivery. This, however, was quite a distance from the truth, where results showed that quite often, lip service was being paid to best practice. Testing was continuously squeezed when it came to a declining timeline and/or budget - so quality was under constant threat.

Though there were some promising responses, understandably to a point, most organisations concentrated on getting to market as quickly as possible with their solution and as a result, there was often an acceptance that the consequences of bad quality could be dealt with later, often after go-live.

WHERE DO WE STAND TODAY?

Fast-forward to 2020, and the same question applies – and, given, in this digital age, the prominence and ever-increasing importance of stable financial systems in supporting day-to-day commercial and personal activity, the need for almost guaranteed quality is greater than at any time before.

How seriously then do organisations, in general, consider testing nowadays in fulfilling this need? Have things changed in any great way – where testing is no longer seen as a project’s poor relation or the first to be squeezed when time/budget is under pressure?

Whist as a practitioner, it would be great to proclaim a resounding YES, however industry evidence and experience shows that we have not learned or progressed much at all. Sure, methodologies and tooling have improved to make the tester’s life “easier” and “faster” – but methodologies and tooling do not deliver testing projects – people do! And people make mistakes. People take short cuts. People take direction. Hence, when that budget or when that timeline is squeezed, it makes no difference if you have the top market-rated commercial or open-source tools or apply the latest theory from the industry’s “thought-leaders” – quality will suffer.

Unfortunately, as it was in 2012/13, industry continues to be littered with high-profile failures. You only have to look at serious financial services incidents and outages over the past few years to realise that this is still an ongoing concern. Personal experiences of certain test projects also, supports this view.

So why, despite the proliferation of “best practice test methodologies /approaches and tools,” does this continue to happen? The answer it appears, is age-old – and not much, it seems, has changed since I last looked seriously at this topic. Evidence suggests that some major programmes are still undertaken without the necessary understanding and cognisance of solid testing practices that ensure quality is inherent in solutions.

THE SOLUTION IS IN OUR HANDS!

All is not lost, however. Deeper consideration of some, if not all of the following, would do more to place testing projects on the right track at the outset and enhance quality over the shorter and long terms - even if budgets and time become an issue later on. At least if the testing project starts out on the right footing, the foundations for success will be forever present.

- **Environments**

If I could give one piece of advice it would be this - do not skimp on the test environments in supporting releases/implementations. You may as well be trying to build a house on quicksand if the correct hardware, software, and configuration of test environments is lacking. Fancy doing Security Testing along with Operational, and Performance Testing in the same environment at the same time during a major programme? Go for it! Just do not expect a quality solution at the end of the project or even, have a sane test team.

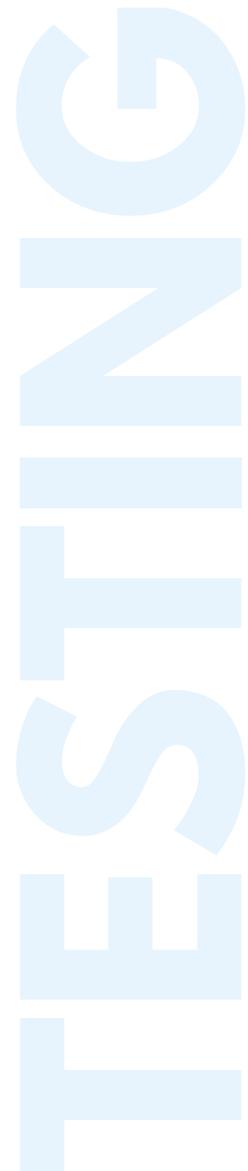
The required environment management, sizing, set-up, and configuration will be dependent on the objectives, complexity, and nature of the implementation at hand.

- **People**

Many organisations hire test professionals for their experience and then do not listen to them - but insist they row in with the “way we do things.” Where is the logic in that? Sure, there’ll always be deadlines - but would you rather get there knowing the solution works or would you prefer to implement a patchwork solution that may do “just enough” to satisfy a project date? Hire and utilise the right people for the right job and utilise tester experience and knowledge - and this can include availing of suitably qualified internal resources.

- **Methodologies**

Agile, Iterative, Waterfall, Hybrid etc. - which is the best? The answer is simple - the right approach to testing is the approach that works for your organisation in leveraging the team skills and capabilities that are inherent or recruited. This is not to say there cannot be a better way of doing things. Continuous improvement should always be an integral part of any approach to testing - regardless of the method employed. Conducting a Maturity Assessment is one sure way of establishing where your organisation is and where it wants to be when it comes to test effectiveness, efficiency and supporting business initiatives.



- **Tools**

The one thing the testing world is not short of, is test tools – from test management, data, metrics, requirements, to automation and performance etc. There are a multitude of offerings available to try and perfect to suit the need and intent of most test projects. Too many times though, organisations have invested many thousands of euros in tools based on nothing but a whim, preference, or sales pitch – without fully understanding what can/cannot work and importantly, what benefits are to be had.

As with selecting an approach for testing, due diligence, and an examination of the right tools to suit the organisational circumstances and goals are required. This can easily be achieved with an examination of your organisation, skills, appetite for change and business objectives – where initially baby steps are taken to prove/disprove a chosen tool via a Proof of Concept before a total commitment is made. It is wise to remember in choosing a tool or set of tools to support test activity that, whilst commercial offerings can be quite expensive, open source tools are not totally free either. They come with a bill for onboarding time, upskilling, technical infrastructure, and ongoing maintenance of test suites.

- **Data**

Quite often, not enough cognisance is paid to identifying, selecting and supporting the right datasets to ensure testing is as effective as possible. Whilst some of the tools mentioned above will save time in auto data generation and management, such generation depends on a detailed knowledge and the potential vagaries of the data under test which, in general, can only come from business or domain experts. Again, having the right, knowledgeable people in place to support data generation is critical. Test data must reflect the realities of the system under test and should accommodate both positive and negative scenarios.

- **Customer Requirements and Test Design**

Testing does not exist or take place in a vacuum. Good test design and execution takes place on foot of good requirements and good requirements reflect faithfully, the business needs. Methodologies are not an excuse for poor practices when it comes to eliciting and defining business requirements – whether they transpose into User Stories or the more traditional type of hierarchical requirements. Efficient and effective testing can only occur when business requirements are clear, concise and unambiguous.

Involving the test team as early as possible in this process, along with skilled business analysts or Product Owners who can elicit and document effectively, helps to ensure that requirements are testable, reflect the business needs from the outset in the test cases created and are fully traceable.

- **Test Project Planning**

Stop back-planning! Good planning targets a date into the future for completion based on what we know must be done, including contingency, whilst looking to maintaining quality at the heart of the solution. Once back-planning occurs, everything must fit into pre-defined time-boxes – and that only leads to corner cutting. Plans are just that... Plans, and they will always change - but forward planning within the constraints of the overall project plan, is the way to go and is the key to delivery success in testing.

The above serve as a reminder of the fundamental building blocks that should be in place for testing to be both efficient and effective. Each of these topics, however, could attract a separate initiative to implement successfully – but add up incrementally, to where the sum of the parts will be greater than each of the individual components to deliver overall business value.

CONCLUSION

Let us be real here - there is no silver bullet! Projects do and will continue to, run over time and/or out of money - and one of the first areas to feel the pressure of any reduction in time or effort is testing. Regardless though, there is still the right way to do things. Whilst the above will not solve all testing problems, it will go some way in mitigating the risk of reduced or inadequate quality which is a natural by-product of corner-cutting and bad practices. At a minimum, it is essential that the risk associated with cutting corners is fully assessed, communicated and understood.

The observations above will, of course be of no great surprise to anyone in the professional testing world, I'm sure. Whilst we need to move with the times to avail of efficiencies that may be gained through innovation in testing, we still, more than ever, need to remember the basics which will always act as a solid starting point! In doing so, who knows - the paper to be written in the future relating to this topic, may well be much more positive.

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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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