Sizing the Quality Engineering Market in Financial Services

The Unrealised Opportunity

A QA Vector® Insight Paper

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Quality Engineering in Financial Services

A hugely underestimated trillion-dollar opportunity for vendors, developers and CFOs

Between a third and a quarter of IT spending goes on "quality" – QA and testing; ensuring that the IT is fit and keeps working. Only a tiny fraction of that is spent on specialist quality engineering vendors.

- ➢ Is the market for those vendors underestimated?
- ➢ Can that large, mainly internal spend, be optimised?
- ➢ Is there an opportunity for substantial reduction of expenditure?

The answer to all three is a resounding, "Yes!"

This paper explores where the money is going today. We set out the spend on quality engineering, highlighting how much is spent not simply on testing but on re-engineering and remediating what has already been created.

Our analysis is based on our deep data across projects and programmes in a wide range of financial institutions internationally, gathered through our QA Vector® Analytics quality engineering benchmarking service.

It points to the huge – and widely underestimated market – for QE solutions and vendors and the opportunity for substantial savings and improvements in processes that will facilitate increased velocity and quality of releases.

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The market opportunity for financial software quality – a trillion-dollar space

Is the global market for software quality assurance really only $40-50bn? That is a widely quoted market size – for example, Global Market Insights estimated a number of $40bn for 2019*.

We believe this hugely underestimates the opportunity both for vendors to address and the total spend.

This paper shows that for leading financial services firms alone the spend is four times that number, and the quality engineering space – the amount spent today that could be saved or spent more wisely by use of the right quality tools and approach – is closer to $400bn. For the overall financial services sector, think more than double again.

* Sources in Appendix

Defining the market: what is spent vs what is spent on vendors

According to a range of highly credible and well-researched sources, as much as $800 billion a year is spent every year globally on IT and software development by major financial services firms. How much of that is spent on vendors, and how much is available to be spent on specific service and specialist vendors, and, within that, particularly quality engineering (we are QA Financial after all!)?

It's a key question, both for companies building a sales and marketing plan and for investors in the space. And it is one where there is a great danger of groupthink and the rigidity of an established consensual truth.

Financial services technology is experiencing multilayered, structural change. The shift online in general, regulatory change, technology shifts and the adoption of new operating models are all driving a need to do more for less and faster; so quantifying and budgeting for reasonable spend and savings really matters.

GIGO (garbage in / garbage out, for younger readers) is still applicable here. The addressable market is unlikely to be simply the estimated sum of what is being spent today.

In this paper, we consider the factors affecting the addressable market for vendors and service providers in the space for quality engineering and provide some broad estimates for the overall total addressable market, serviceable addressable market and ways of thinking about the serviceable obtainable market for different types of service, at a high level. Please contact us to find out how we can drive this down much further, to the individual activity or vendor level.

Factors affecting market sizing

Sizing the market for quality engineering presents three challenges.

First, how we do it today may not be how we plan to do it going forwards; adopting a given vendor may be part of a plan dramatically to change cost structures. If the process being automated is manual testing, then the spend on the vendor should be substantially less than today's spend. However, if, for example, the financial institution is replacing manual payments exception management or customer onboarding with an automated solution, there will be new spend on related automated testing.

Second, the positioning of the quality focus in the engineering lifecycle changes the tooling needed. In a waterfall, relatively slow release cycle, different tools and different provisioning (cloud versus on-prem) of the testing may be needed compared to a DevOps process.

Third, the vendor opportunity may be to replace an internal, multi-part, often sclerotic series of steps to which the institution does not, or even cannot ascribe a clear spend. A good example of this would be the capture, preparation, structuring and provisioning of test data. In most institutions today, this is left to program managers as part of the development processes and the cost is hidden in the program costs. Several vendors are vying to replace this hidden spend with an explicit spend - a new line of cost to replace one that does not exist, at least not explicitly today.

Visible cost vs the cost of inefficiency; unrealised potential saving as cost

QA Vector® Research recently asked financial firms how they tracked RoI in quality-related spend. The most common answer was a focus on the saving compared to prior years through automation. Of course, savings are not returns on investment.

The answer highlights two challenges: measuring returns on an investment in a component of a process that doesn't have clear implicit returns; and defining all of today's costs that should be impacted by tomorrow's revised spend.

QA Vector® Analytics, our benchmarks on the effectiveness and efficiency of the spending that drives software quality, provides a solution to the first challenge. This is not the focus of this paper but please find out more about this by contacting us.

For this paper, it is more important to identify the costs today that may be impacted by the spend; if not exactly the directly addressable "market", at least the part of the existing budget for IT that a particular vendor is attempting to address.

Today, QA Vector® Research, IDC and others suggest that, on average, financial firms worldwide spend around a quarter of their IT budget on quality assurance and testing. Our own data, gathered from more than 100 FIs - both established and fintech - suggest a range from 15%-35%, with around a quarter being the most common order of magnitude. However, these numbers are increasingly hard to pin down as testing is decreasingly a ring-fenced and separated part of the development cycle. Clearly, reducing the spend from one end of the range to the other represents a substantial opportunity for savings, but we suspect that the lower end of the range may be hard to achieve if costs are fully broken out and properly recorded.

Don't worry: in many, even most organisations there are even larger prizes on offer.

There are substantial inefficiencies from repeated and avoidable tasks in development and delivery, for example (but not limited to), test environment deployment and non-production data provisioning. It is very hard to place figures on these inefficiencies (we are working on it!) but a report by Flexera suggests that 12% of firms' technology spend is wasted. IBM has identified cases where they believe they can account for such opportunities accounting for some 20% of spend.

The other major area of inefficiency is remediating software either pre- or post-production, along with related network, connectivity and other deployment issues. Some financial firms whose projects and programmes we have benchmarked estimate that they may spend up to 50% of their IT budget on remediation and dependent issues - and these figures are over and above their spend on testing.

Defects requiring remediation arise from a number of sources, from being baked in at the design and specification phase to driven by disconnected working practices to sloppy development, as much as inefficiencies of testing, unfit test data, poor or incomplete test coverage, and poor testing processes in general. Identifying the specific source of the challenges giving rise to remediation is itself non-trivial. We believe the opportunity to recapture some, maybe a substantial part of the spend on remediation is likely to be well over 10% of the total IT budget and in some cases over a third.

Combining these two numbers suggests that the market opportunity for effective quality engineering services from efficiency gains (money being spent today that could be spent more wisely, or efficiently) will for many firms be somewhere between 20% and 50% of a firm's present budget - on top what they spend today explicitly on QA/testing.

Different value propositions: quality engineering and quality assurance

We would split vendors selling into the quality engineering space into two groups:

- Those that offer a service to complete a familiar task and replace an internal or other external solution. Often (but certainly not always) SIs and functional and non-functional specialists are used in this way, to improve or replace an existing QA and testing activity.
- Those that propose a re-engineering of an existing need to create a new approach or workflow. All the specialists in data management and most of the workflow development and testing orchestration and virtual environment deployment providers would fall into this category. The solution proposed will not, generally, be about replacing an existing test function but rather entail rethinking some part of the development and deployment process to deliver better outcomes. This latter group, therefore, is not addressing a market opportunity best defined by existing test vendor spends but rather defined by the total development spend that a successful quality engineering deployment can impact and reduce.

Defining the TAM, SAM and SOM of it all

The addressable market in the QA/testing space is often defined by market analysts as their estimate of the sum of the spend on existing vendors. We believe this is a fundamental error on two counts:

- First, for most buyers of solutions their spend will replace some combination of internal and external expenditures; and
- Second, as we have shown, a successful deployment will free up spend presently trapped in inefficiencies.

We, therefore, consider the total addressable market for quality engineering solutions should, at a minimum be considered as 22% of total IT spend (from QA Vector® Analytics data) reported allocated to QA/testing, but we can arguably more than double that number with a moderate allocation from the potential efficiency gains.

In fairness, we should apply a haircut to that number to allow the market to drive savings in this space. And for any given solution type, the opportunity will, clearly, only be a slice of the numbers we are proposing. We are presently working on ways of estimating this and benchmarking the savings and RoI delivered through quality engineering solutions by different vendors.

What we can already say is that the serviceable addressable market for quality engineering solutions will often be much larger - and the scope and style of the sales value proposition much broader - than sometimes expressed by market analysts. Understanding this, in turn, permits us to recalibrate our understanding of the serviceable obtainable market for a given solution. Some institutions have achieved much greater efficiencies than others or are more locked into existing processes than others. Some have businesses, or business lines, or regulatory environments that will limit the ability to unlock the realistic serviceable market, and then some solutions will only fit in transforming a subset of the serviceable opportunity. We are working with vendors to apply QA Vector® Analytics to assist in determining credible values for their solutions in different market segments.

Summarising the numbers

We started by noting that major financials spend some $800bn annually on IT. In fact, industry surveys consistently report some 10% of all revenues in the BFSI sector globally (a sector that accounts for more than $20 trillion of revenue) is spent on IT[1]. That implies a total market IT spend of some $2 trillion annually.

Of this, we have reported that around 22% is spent explicitly on QA/testing but the opportunity for improved efficiencies would more than double that number to the Total Addressable Market for quality engineering solutions. That would imply a realized TAM among major financials alone for QA/testing of $176bn or the total market of around $440bn. Including the opportunity for efficiency gains increases those numbers, what we have termed the unrealized TAM, to $400bn and $1trn respectively.

Any projection of addressable market has the tendency to imply a larger opportunity than any one vendor can realistically attack. This paper does not seek to break down the addressable market for any one solution set - we are working those - and nor does it address the competitive pricing constraints within which any particular vendor must sell.

What this clearly demonstrates is the size of the prize that investors are seeking to access and the framework within which all participants - BFSI CFOs, CTOs and quality engineers, vendors and investors - should consider their opportunity.
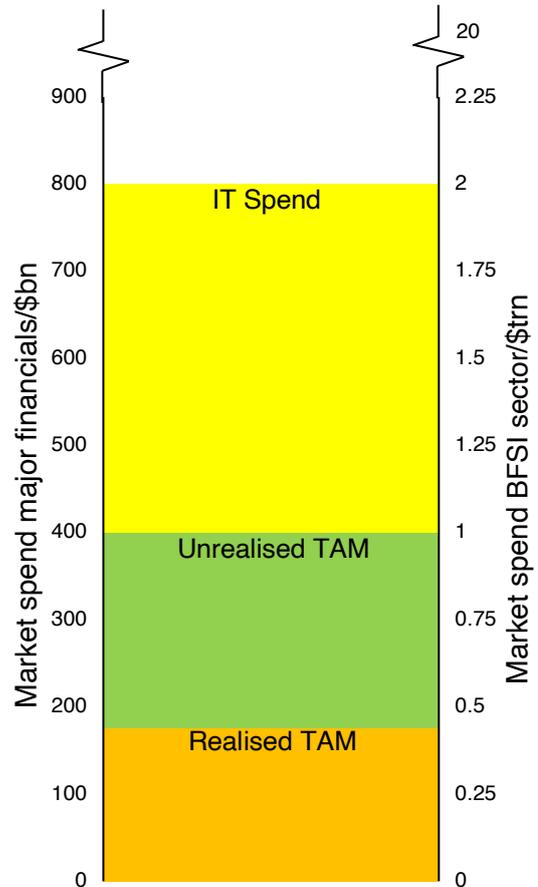
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Appendix – selected sources

QA Vector® Analytics

Market research feedback from more than 200 financial institutions and project and workstream benchmark data from about 100 current or recent software development programs.

Global Market Insights

https://www.gminsights.com/industry-analysis/software-testing-market

Leading Financial Services Firms

https://en.wikipedia.org/wiki/List_of_largest_financial_services_companies_by_revenue

IDC

https://www.idc.com/promo/global-ict-spending/forecast

IBM

https://testsigma.com/blog/why-test-data-management-is-more-important-than-you-think/

Flexera

https://2teyt17s6x52yehgd4cdel0r-wpengine.netdna-ssl.com/wp-content/uploads/2020/06/2020-State-of-Tech-Spend-Report-Flexera.pdf