

Reimagining Assurance

The Evolution of Assurance as a Value Center

Abstract

Businesses and more importantly IT functions must realign themselves to meet the needs and preferences of the changing and highly demanding digital consumer. From daily responsibilities to providing innovative solutions that increase efficiency and productivity, IT is expected to do more, within the confines of smaller budgets, fewer resources, and lesser time.

The emphasis on superior customer experience is leading organizations, and specifically, the assurance organization, further into the strategic realm – where it has shed its identity as a cost center, and instead, assumed the role of a value center that makes significant contribution to the organization's current and future success.

In this paper, we showcase how assurance organizations have transformed themselves from cost centers to value centers to meet the demands of the Digital Reimagination™ era.

Robust, strategic assurance organizations enable enterprises to:

- Get products to market faster
- Improve customer experience
- Shift left and reduce the total Cost of Quality (COQ)

Digital Reimagination™

Today's leading enterprises are racing towards a digital future at breakneck pace.

Enterprises are embarking on the path of Digital Reimagination™, which involves reimagining the business model, products and services, customer segments, channels, business processes and workplaces, leveraging the Digital Five Forces of mobility and pervasive computing, cloud, Big Data, artificial intelligence (AI) and robotics, and social media. Based on the Global Trend Study, The Road to Reimagination: The State and High Stakes of Digital Initiatives, that TCS conducted in 2014¹, the following summary indicates organizational spend on the Digital Five Forces.

- 28% Big Data and analytics
- 20% social and online communities
- 20% mobile and miniature computing devices
- 19% cloud computing services
- 13% AI, machine learning and robotics

Approximately seventy percent of companies participating in the 2014 TCS Global Trend Survey rate digital initiatives as important or most important to their success. And the average per-company spend on these initiatives in 2014 was \$113 million. As with any initiative, it is very important to reap the return on investment (ROI) and ensure the initiatives achieve their intended objectives. Reiterating this point is an article in *The Telegraph*², which narrated the case of the British Broadcasting Company (BBC). BBC invested several years and £125.9 Million in an initiative to shift its programming archives from videotape to digital storage and editing, only to halt the program when it proved unreliable due to the poor planning and management of the project.

Under these circumstances, IT functions are under tremendous pressure to quickly deliver projects aligned with business needs. Within IT, assurance (QA and testing) organizations play a key role in assuring that the implementation meets the needs of the business and end customers. Hence, it is important that assurance organizations reimagine themselves to live up to this demand and focus on the following areas:

- Customer Experience Assurance
- Accelerated Assurance cycles and Speed to Market
- Technology Driven Assurance
- Workforce enablement

[1] 'The Road to Reimagination: The State and High Stakes of Digital Initiatives': <http://sites.tcs.com/stateofdigital/>

[2] *The Telegraph*, Britain's biggest IT disasters in 2014 (January 5, 2015) http://www.telegraph.co.uk/technology/news/11307560/Britains-biggest-IT-disasters-in-2014.html?utm_content=buffer0eb01&utm_medium=social&utm_source=linkedin.com&utm_campaign=buffer

Customer Experience Assurance

Today's assurance organizations are moving towards becoming the Guardians of Customer Experience. Acting as quality gates, they help assure business confidence before a product is deployed in production. Traditional testing metrics related to test coverage, defects, and test effectiveness do not objectively assess the confidence level in deploying a release into production. To overcome this, organizations now rely on new metrics such as Earned Business Confidence, which plays an important role in objectively correlating the impact of testing to the business outcome or customer experience. This is often used to decide 'Go / No-Go' for any release deployment. To start implementing and reporting on this metric, the assurance organization should reimagine the approach for risk based testing and metrics capturing.

Industry trends indicate that organizations are moving towards novel approaches such as analytics driven test strategy, which involves examining production logs and mining them for events, scenarios, and data that impacts the end customer experience, and ensuring such cases are well tested. This creates a closed loop conduit between the production and requirements phase and drives the first time right agenda. Another emerging trend is testing in production, which focuses on validating real life use cases in production whilst maintaining the sanity of production data and not impacting any customer.

For example, in the Media and Entertainment sector, 'Last Mile Testing', which replicates the end-customer experience in a real life network and infrastructure setup, is fast becoming popular. It focuses on testing real life use-cases that cannot be simulated in a testing environment. The same concept can be used by other industries that involve intensive interaction with end customers.

These examples illustrate how assurance as a function is moving beyond traditional validation and verification, and emerging as a Guardian of Customer Experience in the digital era.

Accelerated Assurance cycles and Speed to Market

Gone are those days where assurance organizations reported regression test cycle reduction as one of their key performance indicators (KPIs). Today, the focus is on how assurance can help in reducing the overall speed to market beyond the assurance cycle. Organizations are embarking on two key aspects to achieve this:

- Automating the entire test value chain, including test design and industrializing overall testing activities in a true factory model
- Focusing on overarching areas between Development- Assurance – Operations team such as release automation

Though this may not be the core forte of the assurance organization, release automation ties-in closely with day to day assurance activities. The assurance organization is therefore well positioned to look at automating the Release Deployment process. Amazon is a classic example of a company that pushes releases to production every 11.6 seconds. This is only possible with an effective assurance team. Especially in the adoption of the DevOps delivery model, automation across the value chain becomes very important.

Last but not the least, achieving accelerated speed to market is not easy. Assurance teams are now using Ruby on Rails, Python and many other scripting languages to build automation utilities and frameworks. Yes, they are moving towards developing custom code - and not just leveraging out of the box tools or functionalities - to automate. This requires thorough Reimagination of the tools and skill sets used to automate.

Technology Driven Assurance

CIOs, CDOs, and CMOs often invest heavily to revamp the technology architecture with the goal of simplifying and enriching its throughput to meet the goals of Digital Reimagination™. These technology refresh programs largely focus on niche assurance areas such as high availability testing, structural code quality, fail over testing, and so on. Given that these types of testing are not very common, assurance organizations need to embrace newer tools and techniques to deliver these.

Take the case of Australia's largest department store chain, Myer, which has repeatedly suffered due to issues that have impacted its customers' online shopping experience. Despite substantial investments in new technology, Myer's website has crashed repeatedly when placed under the strain of unusual shopper demand, according to a *Sydney Morning Herald*³ article. The then chief of Myer had to apologize to angry customers. He said the latest problem had nothing to do with capacity, or the ability of the website to handle heavy customer traffic. Rather, it had to do with an application "not talking" to the server and causing the web pages to time out.

Probably assuring the technology thoroughly could have helped Mayer avoid this situation.

[3] *Sydney Morning Herald, Myer website crashes during Boxing Day sale, December 26, 2013* <http://www.smh.com.au/business/retail/myer-website-crashes-during-boxing-day-sale-20131225-2zx6j.html>

Workforce Enablement

So far, this article covered practical use cases underlining the need for reimagining assurance under three major themes- customer experience assurance, speed to market, and technology driven assurance. Reimagination will not be complete without the practitioner's viewpoint on the workforce enablement required to drive these themes.

Leaders of various assurance organizations are embarking upon workforce enablement approaches. This is not about traditional competency enablement alone. This covers aspects such as defining newer roles, novel ideas to cross-skill and/or up-skill assurance associates, and promoting the belief of being part of the assurance community. This requires substantial organizational change management and mindset change within the team.

A leading retail organization has gamified the whole workforce enablement process with an interactive curriculum and a scorecard that looks like a racing car's dashboard. This significantly motivated assurance associates to proactively learn and test new technologies. The organization has also defined new roles such as the Dev Test Integrator, who serves as an orchestrator between all key stakeholders involved in the product lifecycle and plays a key role in the DevOps delivery model. This example illustrates how workforce enablement, competency planning, and role progression need to be reimaged in the context of Digital Reimagination™.

Conclusion

The pace of business growth continues to accelerate, leaving lesser margin for error than ever before. Organizations are under enormous pressure to keep up this pace while ensuring flawless performance. Furthermore, today's enterprises are running lean, requiring that Cost of Quality be reduced to virtually nothing.

More and more, enterprises are recognizing that the capability and skill sets of assurance organizations are uniquely positioned to contribute to meeting all of these challenges. The assurance organization can no more be considered a cost center. By leveraging assurance as a strategic partner from the earliest stages of process and product development, businesses can realize real value. Companies can meet their 'first time right' objectives more efficiently, guarantee superior end-customer experience, adopt shift left techniques and reduce the overall CoQ.

About Authors

Kannan Subramaniam, Comcast

Kannan Subramaniam is the Vice President of Quality Assurance at Comcast and has rich experience in Software Verification and Validation services. Kannan has a proven track record - he has established a Testing Center of Excellence (CoE) for a Fortune 500 financial organization, and has served as practice manager for several major U.S. financial services institutions.

In his current role, Kannan is responsible for assuring the quality of the organization's IT applications. Kannan has championed and implemented several Process Improvements and transformation themes (such as Test Data Management, Assurance on Cloud, Big Data Assurance) in his current role. He has been a speaker at various industry events, forums, and webinars.

Prasad MK, TCS

Prasad MK is the North America Assurance Practice Director for the Assurance Services Unit at Tata Consultancy Services (TCS). He is responsible for assurance consulting and solutions for the Telecom, Media and HiTech industries. Prior to this, he has worked with various global organizations to strategize customer experience testing as well as quality assurance (QA) and testing approaches for large digital transformation programs.

About TCS' Assurance Services Unit

With one of the most comprehensive portfolios of independent test capabilities on offer, TCS addresses both business and quality challenges for its global clients. We empower organizations across domains to optimize overheads, realize first mover advantage and improve customer satisfaction.

TCS offers assurance services across the testing value cycle, including test consulting and advisory, test services implementation, and managed services for test environment and test data management. We continually redefine testing and QA paradigms to help our clients stay ahead of the curve. Our library of domain-based reusable business functions and proven engagement model founded on the twin pillars of product and process quality enable us to deliver certainty to our clients.

Over 28,000 testing consultants, strategic alliances and partnerships with key product vendors, more than 60 dedicated test centers of excellence and our innovation labs power our tailor-made solutions, testing assets and accelerators. With specialized test environments and labs, TCS drives the delivery of assurance in a non-disruptive, agile, and automated manner, making the entire development lifecycle more efficient.

Contact

For more information about TCS' Assurance Services Unit, visit:

<http://www.tcs.com/assurance>

Email: global.assurance@tcs.com

Blog: [#ThinkAssurance](#)

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