DIGITAL 360 ASSURANCE

zensar

The Evolution of Testing:
Digital Assurance

How Winning Companies Guarantee A Winning Digital
Experience - 100% of the time!

White Paper

There has been a massive boom in enterprise digital footprints and cloud adoption in the last half-decade. Technologies like Internet of Things (IoT), Artificial Intelligence (AI), Machine Learning (ML), and mobile are central to optimizing operations, reducing costs, and boosting productivity internally. On the customer-facing side, the rise in online transactions, and the multiplicity of digital interfaces have transformed end-user experiences. This amplifies the need for transitioning from quality assurance (QA) to advanced digital experience assurance, with a more holistic coverage.

Accelerating digital transformation leads to a multiplicity of interfaces

In many ways, the COVID-19 pandemic has fast-tracked the already speedy pace of digital transformation for enterprises. It has forced organizations to accept the new reality – going digital-first and adopting contactless mechanisms wherever possible. Demand for digital solutions is greater than ever before, and organizations capable of adapting have a significant chance of success in the recovery period. Exemplifying this, McKinsey predicts that the volume of digital transactions will grow by 6% between 2018 and 2023 globally (continuing its steady rise) , placing immense pressure on enterprises to keep up.

In banking, financial services, and insurance (BFSI) particularly, the crisis has propelled AI to the forefront. It reduces manual effort and error rates by enabling automated data analysis, chatbots, and assistants. AI also plays a massive role in tracking patterns of customer behavior to detect fraud and drive personalization to unlock top-line improvements. Similar trends apply in the retail sector as well. Chatbots are now a customer service staple, enabling a low-touch economy that

promises to revolutionize customer experience (CX) as a whole. However, digital transformation also introduces a major challenge in terms of assuring a superior and consistent experience across these various touchpoints.

CX futurist Blake Morgan, writing for Forbes, noted why a laser-focus on experience is so important :
- Organizations that excel in customer experience surpass peers by nearly 80%.
- Companies lose $1.6 trillion from customer migration owing to poor service.
- An increase in revenue has been observed by 84% of companies that focused on the quality of experience.

In the digital era, end-users expect flexibility when they approach an organization for service or support, connecting and interacting through their preferred channel, be it email, voice call, chat, or social media. European companies with more digital competence across channels have a 2.5 times higher sales conversion rate than those with limited touchpoints. And in the context of COVID-19, this is now a business imperative.

Companies looking to gain from this increased demand from digital cannot afford to miss out on the essential step to compelling CX.

Customer-centric teams face new, emerging use cases every day

As operational environments evolve and digitalization becomes integral to revenues, the role of experience is changing. Rather than playing an ancillary part in the product design and development lifecycle, they are front and center – directly responsible for ease-of-use, experience, and end-user loyalty. This leads to unfamiliar and challenging use cases towards ensuring a good experience.

Let us look at four examples:

1. Banking and Financial Services (BFS)

A traditional banking and financial services provider, eager to compete with digitally native banking disruptors, wants to launch a series of new products quickly. These range from contactless payments for its retail partners to a mobile banking app for millennials and transitioning its entire technology architecture to the cloud. All the while, it must stay compliant with local and national laws, being a highly regulated industry. As the bank matures on its digital transformation journey, it encounters possibilities for proactive user engagement monitoring through AI, biometrics for fraud management, and a host of other possibilities.

However, legacy testing capabilities are holding back the transformation pace, taking away from the bank's early mover advantage. In this scenario, the banking and financial services provider must:

- Conduct all application testing on-premise for stringent security and compliance
- Test, monitor, and analyze digital payments services including P2P and NFC transfers
- Achieve seamless interoperability with third-party enablers and partners
- Conduct real user simulations for various customer scenarios, as well as check for security vulnerabilities

2. Insurance

COVID-19 has disrupted traditional insurance sales and underwriting processes, as in-person interactions must be kept to a bare minimum. So, a national insurance provider is looking to launch a suite of multi-channel applications that would bolster its digital footprint. In the long term, this would also give them a leg-up over competitors who were still stuck on legacy. However, the company faces two roadblocks – first is a tight deadline to ensure market relevance, and second is the need to stay compliant with local laws/regulations out of the box.

This requires the insurer to:
- Integrate the user experience across multiple channels or platforms
- Set up end-to-end automation and Testing Center of Excellence (TCoE) for user devices
- Enable efficient, on-the-go testing for agent apps
- Monitor the insurance value chain for new opportunities

3. Hi-tech Manufacturing (HTM)

As part of its scaling journey, a semiconductor manufacturing company is undergoing digital transformation. Every plant across the world will be equipped with an ops management application, with custom functionality as per its business need as well as integration with a centralized hub. Delivering assured experience and functionality at this scale is a major challenge.

This calls for manufacturing companies to:
- Validate interoperability and compatibility across multiple protocols and devices
- Drive device setup using a pay-as-you-go services model for greater scalability
- Test network impact and performance, factoring in local infrastructure
- Check user experience across different plants and the central hub

4. Retail

A global, brick-and-mortar retail chain wants to boost online sales volumes and has identified that a mobile shopping app would help achieve this target. But the company is new to the digital landscape and recognizes that a poor app experience would put off prospects for good. The retailer is eager to get it "right first time," launching a "sticky" mobile app that would translate into a better brand reputation and revenue uptick.

This necessitates the retailer to:
- Test for assured user experience quality in multiple scenarios on the app interface
- Monitor experience across different customer locations and mobile carriers, with detailed diagnostic/analytics data
- Conduct Competitive benchmarking for user experiences and app's performance
- Monitor retail-specific Key Performance Indicators (KPIs)

All of these use cases have something in common: they require companies to be dynamic, ready to scale, and evolve towards more holistic assurance and testing coverage.

This would help to accelerate releases of products/applications across various platforms, gaining a competitive advantage. Companies can also access deeper performance insights, baselining future products. Security issues can be detected early on, smoothening the release cycle. By pivoting the process around experience-centricity, companies can reach targets faster and unlock maximum value from their digital footprint.

5 technological concerns while innovating superior CX

Digitalization has redefined the way we connect with businesses, and post-pandemic this has pushed the trend to critical mass. As organizations come to terms with the new normal, technology innovations and the pace of implementation will speed up and digital experience assurance will have to keep pace. This can be distilled into five key factors:

1.   A growing landscape of integrations and partners

Application Programming Interfaces (APIs) join various systems or layers of an application, connecting and transferring data and logic. API testing allows digital experience assurance teams to isolate test cases and execute them independently. API testing needs to be a fast-paced process so that bugs or errors can be identified and fixed almost immediately. API testing must cover disparate areas like business logic, data responses, performance bottlenecks, and security for every integration and partner.

2.   Diverse devices and form factors, thanks to the Internet of Things (IoT)

IoT is a network of any "thing" with the capacity to transmit data and communicate with each other over a network without any human interaction. The installed base for IoT will grow to 26 billion units by 2020, according to Gartner. Performance on all devices needs to be at par with industry benchmarks, and this will only get more complex with the emergence of edge computing and other advancements in IoT. Digital experience assurance teams must keep up, ensuring that a company's entire IoT network meet functional and non-functional requirements.

3.   Cloud-hosting becoming an industry staple

Application hosting allows organizations to lower their resource costs and democratize access across locations. Currently, most organizations depend heavily on the cloud, which opens up very specific security vulnerabilities and expectations around UX. Digital experience assurance teams familiar with cloud testing challenges, tools, and techniques can help companies stay a step ahead of the curve.

4.   Exposure to ever-growing cybersecurity risk

Detractors of digital transformation often cite security threats as a major downside – particularly for companies investing in cloud and open API networks. Industries like BFSI and retail, which deal with huge volumes of personally identifiable customer data, need to stringent testing – and that's why cybersecurity and digital experience assurance go hand-in-hand. This makes sure that customers can continue using their application/service with confidence.

5.   The slow but steady rise of blockchain architecture for enterprise apps

There is no denying the fact that blockchain is fast penetrating BFSI and retail, whether it is for fraud detection via blockchain, or blockchain customer loyalty apps. This peer-to-peer decentralized electronic ledger technology is poised to support smart contract portability and cross-chain functionality by 2023, reports Gartner. Digital experience assurance models will need to adapt to this architecture, preventing errors and improving the front-end experience for blockchain platforms.

What does a digital experience assurance solution look like?

Organizations must focus on providing the best customer experience in order to thrive in the current digital era, making digital experience assurance central to the digital transformation process. Importantly, it comes with various hurdles like changes in consumer behavior, an increase in competition, and new technology advancements and interfaces. A holistic strategy is a must-have in order to ensure success.

Testing against real-world scenarios, IoT devices, and varying network conditions

Mobile and IoT (e.g., smartwatch) app testing is an important aspect of digital experience assurance, going beyond only functionalities to cover user experience as well. With frequent updates and new OS launches, complexity is bound to arise. Mobile testing allows us to identify and resolve critical bugs, leveraging efficient automation and strategic manual intervention.

Compatibility with black-box and white box testing

Black-box testing is essential, as it lets testers experience the software like it would be seen by the user/customer – without diving into the internal structure/design/implementation. White box testing allows for a more detailed deep-dive, and both must come together – across all native integrations and platform experiences.

Continuous monitoring to detect errors at every stage of production

Continuous monitoring allows for quick detection of non-compliance, performance issues, and security risks, even in the application production stage. By mapping out extensive user journeys, enterprises can isolate the most relevant issues and address them in a targeted manner.

The ability to provide specialized solutions for emerging consumption environments

In the digital era, digital experience assurance solutions need to quickly adapt to the most popular consumption environments of the day. This could range from OTT and immersive content capabilities to highly specific enterprise use-cases like a remote workforce app for on-field healthcare workers. A superior quality of experience is central to customer loyalty and employee productivity, necessitating specialized digital experience assurance solutions.

Managing the different modes of user access and active devices

Digital enterprises operate a complex environment, with any combination of endpoints – across mobile, desktop, IoT, on-premise, and cloud. Rigorous testing will ensure smooth user access and device compatibility for apps on any endpoint. The flexibility to choose the vector is also critical, as it empowers targeted testing for a particular OS, smartphone variant, or network.

How does Zensar enable holistic digital experience & customer experience assurance?

Zensar combines test automation, and experience assurance to put together a holistic solution, fit for the digital era. This ensures greater efficiency, owing to automation, as well as a keen focus on the quality of end-user experience no matter the device, platform, or network they are on. Some of the key challenges we seek to solve are:

- Existing methods not aligned to real-world needs - Through manual and automated mobile app testing on 30,000+ SIM-enabled devices on thousands of carriers in 160+ global locations, we meet real-world requirements.
- Difficulty in root cause analysis - Through black-box testing, we identify issues in user experience and conduct deeper root cause analysis through white-box testing, powered by CI/CD, DevOps, and native integrations to test platforms. Lack of support for next-gen use cases - we ensure that applications are ready

- for OTT delivery and consumption on IoT devices. We also leverage our extensive domain expertise for industry-specific digital experience assurance solutions in BFSI, retail, and others.
The risk of missing out on user journey gaps - we believe that holistic quality
- assurance doesn't end at production and delivery. That's why we practice continuous monitoring across the user journey – on an adaptable range of endpoints – to weed out issues.

D3A or Digital 360 Assurance is our unified digital experience assurance solution that covers all the aspects of digital experience usability (DEU). As the global technology landscape evolves, spurred on by trigger events like COVID-19, as well as changing consumer behavior, digital experience assurance can reshape the quality of digital experience. By bolstering traditional and automated testing approaches with careful monitoring and sophisticated analytics, enterprises can proactively improve experiences across the board and stay ahead of the pack.

References
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We conceptualize, build, and manage digital products through experience design, data engineering, and advanced analytics for over 145 leading companies. Our solutions leverage industry-leading platforms to help our clients be competitive, agile, and disruptive while moving with velocity through change and opportunity.

With headquarters in Pune, India, our 10,500+ associates work across 30+ locations, including Milpitas, Seattle, Princeton, Cape Town, London, Singapore, and Mexico City.

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