ASSURING THE DIGITAL UTILITIES TRANSFORMATION

Gaurav Kalia
Client Solution Manager

Infosys®
Navigate your next

1. Latest trends in utilities

With a multitude of industries embracing the digital revolution, the utilities industry is also rapidly moving towards this transformation. A few key predictions that give an insight into which direction the utilities industry is heading towards in the coming years are listed below:

- By 2018, 70 percent of the utilities industry will launch major digital transformation initiatives that will address at least one of these three areas: omni-experience, operating model, or information

- Data and analytics will play a key role to drive greater results with energy efficiency programs

- By 2019, 75 percent of utilities will deploy a comprehensive, risk-based cyber security strategy, representing a maturation from a compliance focus to security focus

- The utility IT services spending is expected to grow at a compound annual growth rate (CAGR) of 5.9 percent from 2014 to 2018

  - US$65 million will be spent by utilities on gamified applications by 2016 to engage consumers

  - In addition, utilities will be spending US$57.6 billion on smart grid as-a-service from 2014 to 2023

- About 624 million customers worldwide will use social media to engage with utilities by 2020

- 75 percent of utilities will rely on managed services and industry cloud by 2019, to predict asset failures or recommend solutions; however, they will retain control of asset optimization

- 50 percent of the utilities in 2019 will spend five percent or more of their capital expenditure (CapEx) on operational technologies and the Internet of Things (IoT) to optimize distributed energy resources, field services, and asset operations

- To compete in redesigned markets and support new business models, 45 percent of utilities will invest in a new customer experience solution and 20 percent in a new billing system by 2017

- Forced by extreme weather events in 2017, 75 percent of utilities will make new IT investments to predict outages, reduce their duration by 5–10 percent, and improve customer communications

- Internet sales is rising by 20 percent. Providing reliable service at peak loads is inevitable for businesses

- Over 15 percent of the Internet users worldwide are physically challenged, which brings in the need for more interactive websites

- According to the International Data Corporation's (IDC) quarterly mobile phone tracker report, vendors have shipped 472 million smartphones in 2011 compared to about 305 million units shipped in 2010. It touched 982 million by the end of 2015. On demand access to the digital world means that this segment of customers have very different expectations

- They learn through collaboration and networks – the average Facebook user spends 55 minutes on the site daily

- They expect options and make decisions based on peer recommendations – 78 percent of consumers say they trust peer recommendations compared to the 14 percent who trust advertisements

- They constantly give their opinions and view products, services, and brands online. There are over 1,500 blog posts every 60 seconds and 34 percent of the bloggers post opinions about different products and brands

2. What do the above trends suggest?

Obviously, from the above trends, we can understand why digital transformations have become critical and why the IT landscape must adapt accordingly:

- To move with the technological advancements
- To sustain a competitive environment
- For an enhanced customer service experience
- Better business progression

The key business drivers that are pushing the utility market towards digital transformation are:

Competitive environment

We understand from the trends that technology is advancing and there is an implicit need to use new-age and innovative knowledge. For example:

- Electric utility companies are using smart meters to enable two-way communication to reduce human intervention (removal of call centers)

- Water and wastewater utility companies are looking towards deploying geospatial information systems (GIS) to increase efficiency during the sampling, routing, and analyzing phases of their supply chain

- Implementation of business intelligence (BI) analytics reporting solutions to enable an enterprise to make positive decisions

- Some other key trends seen are the adoption of smart grid technology, intelligent devices in the grid – machine-to-machine (M2M), home area network (HAN), smart home, EV, and cyber security

Customer experience

Digital transformation signifies an enhanced customer experience. Evidently, with technology rising constantly we see faster and more reliable websites with better user experiences. This is because of the popularity of e-commerce applications / packages across all the leading sectors. Moreover, we have the popularity and the potential of social media with which consumers are changing the way they buy utility products. This gives a direction to utility companies to add new value services and social networking tools to their websites.

Regulatory obligations

As utility companies comply with various regulatory obligations (environmental and non-environmental), there are new policies and standards that come up. Lack of tangible systems are driving clients to go for digital transformation.

Operational efficiency

Utility companies will be looking towards better asset management and seamlessly integrated systems so that real-time information of assets is available at all times. This is applicable for both energy and water utility companies. Lastly, since most of the utility companies are using older systems built on outdated platforms and technologies, the problems of lack of support and high maintenance costs can be addressed using newer technologies.

This clearly explains why digital transformations have become the need of the hour for the utility sector as well.

3. Key quality assurance (QA) focus areas in digital transformational programs

After understanding future trends, the utility market must comprehend the urgency of digital transformation to keep up with the advancing developments. Let us understand the aspects that require special attention during QA in digital transformation programs.

Challenges	QA focus areas
Agility	With the digital revolution and constantly growing technology, we see a myriad of changes and the need to pilot newer and adaptable strategies. This is to cater to the needs of a fast-growing and agile atmosphere. The necessity is to encompass the entire testing life cycle – right from requirement analysis to reporting. A well-defined, agile QA strategy will be required during such digital transformational programs to be able to cope with changing requirements.
Exploding data and reporting	In our grandparents's generation, inputs were manageable. However, in this century, there are terabytes of customer data to manage. With the very real possibility of further increase in this figure, it is an unsaid challenge to maintain and secure consumer databases. With a change in the infrastructure, we have to deal with data migration and more importantly, an impact-less data migration. Robust and proven data migration testing services will be required during such migration activities.
Performance and security	There is an increase in online transactions and as discussed above, the advent of big data and the multitude of interconnected applications and devices, will pose a challenge for application performance and data privacy. When a customer performs any kind of transaction over a web-based e-commerce site, he/she is thinking of convenience and most importantly, security. Obviously, the performance and speed of a website matter because nobody wants a slow site in these fast times. This brings in the need for special focus on performance and security testing of these applications.
Mobility	With the anytime-anywhere nature of today's customer, it is significant that flexible aspects of testing are devised on different device configurations. Heeding the need for mobility, keep in mind that this is similar in terms of the challenges of performance and security generally seen in web-based applications. Mobility testing tools and solutions will be of great importance during such initiatives.
Seamless customer experience	The ultimate goal of a seamless customer experience for any company is to make business easy for its customers. It is about finding new ways to engage with the audience in the right way. It is necessary to understand that today's customer is looking for real-time and expert interaction, which is possible with interactive websites. Usability and functional validation will be key focus areas while testing a website that has new features, such as live chat, gamification, online surveys, etc.

Need for skilled resources	The increase in challenges demands skilled testing staff who are innovative and experienced in their utilities domain with niche skills. The focus is on a continuous learning attitude and out-of-the-box thinking ability. Experienced QA resources with domain expertise will be required to support such large digital transformation programs.
Limited budget	Capital is the prime requirement after understanding the necessity of modernization. Clearly, we all want to gain more with less investment. Therefore the need of the hour is to enable test automation and innovative ideas to ensure cost effectiveness. Innovative test automation solutions will be the answer to this most important and silent question of capital.

4. Conclusion

Digital transformation is urgent and extremely significant for utility companies if they are to move with the fast-changing times and always be a step ahead of the competition. Nevertheless, while doing so, quality assurance (QA) is a major aspect and it is important to devise solutions to help the constantly changing environment. This can be achieved by modernizing the infrastructure and having a continuous improvement attitude.

For more information, contact askus@infosys.com

Infosys®
Navigate your next

Infosys.com | NYSE: INFY   Stay Connected   SlideShare