Mobile Apps Testing Trends

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We've just jumped into the new year, and it's high time to overview the mobile testing trends that will dominate and require special attention from testers this year. Here are key trends impacting mobile testing in the foreseeable future.

1. Increasing Device Fragmentation

There are many types and models of mobile devices in the market today, and manufacturers are constantly developing new features in to attract the attention of customers. To keep up, mobile device testing vendors have two options: broaden their set of physical mobile devices or make use of the device farm available in the market. Device farms allow Quality Assurance (QA) teams to access devices via host machines the same way they would test with physical devices in their own hands.

Applying the 80/20 Rule, also known as the Pareto principle to mobile testing, running tests on 20 percent of devices will result in 80 percent of effective testing coverage. If the coverage should be broadened, then automation testing may be required to allow the team to cover all of the needed combinations of devices and operating systems. Testing on emulators may seem less costly, but emulators don't take into consideration the hardware and can't simulate a live environment.

To stay on trend and to be in high-demand, QA vendors should be ready to provide the appropriate testing coverage for as many devices as possible. It is almost impossible to perform testing on all devices available in the market and, what's more, it would be far too costly. When it comes to developing an app testing plan, it is vital to gather key statistics and run tests directly on the end-users devices where possible. And again, when there are too many devices to physically test, automation via a device farm is one of the only viable solutions.

2. Chatbot Growth

Chatbots are pieces of interactive software that reside in applications, email, and SMS and

simulate replies, questions and interactions of a real human being. With the availability and adoption of such frameworks as Google API, AI, and IBM Watson; it's now very easy to build bots in mobile applications. In fact, a survey conducted by Oracle revealed that 80 percent of business aim to make use of chatbots by 2020. Certainly, this opens up a new window of opportunity for testing as well.

The goal of any chatbot is to make life easier for the end users. However, chatbots are put into action either by text or speech input, which pose a set of new challenges for QA and development teams. Testers should be able to perceive the context of the natural language input, and check whether the information the chatbot provides is appropriate. User experience (UX) testing is another aspect that requires attention with the proliferation of chatbots. Testers should make sure that the chatbot doesn't frustrate or irritate users and requires as little input as possible to provide the relevant info.

While some organizations may be excited about incorporating chatbots in their apps and websites, testers should be objective and ensure the bots are providing actual value to the user.

3. Rise of Voice Assistants

In addition to the current rise in the popularity of chatbots, the technology is already available to unlock other methods of communication and it's being adopted at an alarming rate. The days when of text input are dwindling. The age of voice assistants is here.

Amazon's Alexa, OK Google, and Facebook Messenger capture the imagination of users and software developers. For QA testers, it's vital to ensure speech recognition accuracy. This technology should distinguish between all voices, dialects and accents to make the users more inclined to use a voice-active interface, rather than than the screen. In a mobile environment this is even more important. Whether a smart phone or wearable device, the smaller the screen the more likely users rely more heavily on voice - so it needs work and it needs to work well.

Checking the user flow also needs to be thoroughly tested. QA engineers should make sure the assistant can be asked on the go and without being pushed. Interruption testing is another type of testing that should be considered. Testers should create non-verbal natural sounds that imitate coughing, inhaling deeply, having the smartphone ring. Will the app handle it or not? Is it easy to get what I am looking for? These are the question all professional testers should be asking. It's all about the experience.

4. Mobile Payments

Innovative mobile payment solutions like Android Pay, Apple Pay, and Microsoft Wallet, are deployed all over the world, allowing customers to use their smart devices as convenient payment instruments.

In 2018, we are likely to forget about the traditional online payment methods like PayPal or at least

use it less frequently. New types of payment options such as Samsung Pay, Microsoft Wallet, Apple pay and so on, based on internal proprietary protocols, will be used more often.

Testing for payment gateway should include functional testing, integration testing, and, of course, profound security testing.

5. Focus on Security

People use their smartphones today more often than ever before. We are always online, surfing the Internet or chatting with friends. It is obvious that possibilities of apps are developing at a rapid pace and there is a need to provide a sufficient level of security for end users and their private data.

Today, people are increasingly aware of security issues, thus they tend not to click on suspicious links or download unverified data. However, testers cannot rely on user practices alone.

Recently, OWASP published a Secure Coding Practices Guide – a comprehensive checklist that can be integrated into the development life cycle. This is an essential step for unique security policy for mobile testing domain. Security testing knowledge and skill is what differentiates a good mobile testing team from a great one.

6. Virtual and Augmented Reality

VR and AR are the technologies that add artificial objects to the real environment or create artificial environments simulating sounds, senses, hearing, and touch. They are growing extremely fast, and that growth is creating a niche for testing.

Giant companies like Google, Microsoft, or Facebook invest heavily in VR/AR and are buying start-ups concentrating on this type of technology. The biggest companies are eager to be the first to jump into this new and challenging space. QA vendors tend to base their VR testing approach on mobile testing experience as the mobile gaming industry is the biggest domain for VR/AR technologies, however VR/AR has unique considerations.

All VR/AR applications have a unique logic and vary greatly. However, it's clear that the nature of technologies makes non-functional tests as important as functional ones. UX testing specialists should track the usage of the software and pay attention to the users' comfort. User fatigue should be minimized. Are you sure that users won't get dizzy or sick while using the VR app under test? Extensive testing is required to ensure the experience is a good one.To ensure top-notch user experience, all testers should undergo device-specific training to make sure the users will use the app comfortably.

As VR apps will be new to most of the customers, it's also necessary to check whether user error could affect the usage of the whole app, and other user's experiences as well.

7. Accessibility

Apps are increasingly becoming a wide-spread tool for people to interact with the government and state institutions.

Government-created or supported mobile apps already offer a wide range of opportunities for delivering services, such as finding parking lots and paying for them, as well as engaging citizens in car sharing or recycling of waste. Apps may notify the neighborhood about the potholes or send emergency notifications of all kinds. Despite their diverse nature, all of these apps have one thing in common – they must be easily accessible by people with disabilities.

There are well-known standards and regulations that must be taken into account to deliver powerful and versatile apps for all users. And software testers must take the responsibility for meeting them

all.

8. Domain Knowledge is a Must

Mobile apps today could serve any domain: BFSI, healthcare, gaming, e-commerce, etc. To make the most of it, testers should understand each domain specifics perfectly. Testing apps only for functionality and security issues isn't enough. Testers should know the unique business, industry and user requirements and test the app according to them. Before assigning the project to the team, make sure they are aware of the business domain too, and how the apps should perform within its unique environment.

Bottom line

With digital transformation and rapid changes in mobile technologies, business is expecting mature mobile apps testing approaches from QA vendors. Software testers should not only be able to support a wide array of devices and operating systems, but also make sure the app serves the purpose for which it was developed.

Aspects of social concepts and much-discussed increasing possibilities of mobile apps are also changing the way software is being built. Keeping an eye on the upcoming trends, QA and testing organizations should be able to adopt comprehensive testing approaches and deliver powerful mobile products for business and customers.