BOTM

The World A Global Village -

Geo-location Testing Challenges

INDEX

INTRODUCTION

It is indeed a small world that we live in, with the high level of inter-connectivity, be it travel and transport modes or communication channels. The world is truly a Global Village today! Gone are the days when it would be months before the East would reap the benefits enjoyed in the West. Today it is a much more open world with East and West being able to mutually benefit from each other, without having to wait for months or years. The challenges of space and time have been greatly bridged by the digital revolution.

Web and Mobile Apps make transactions, data, information, news, entertainment, etc. available from one end of the world to another in a matter of seconds. Money can be paid half way across the globe with just a few strokes of the hand – of course backed by complex technological innovations.

It must be remembered however, that there are technological challenges that need to be taken care of. All apps – whether Web based or Mobile based, will have to ensure that the app works with the kind of speed and other technological issues that the less advanced regions may be facing. After all, users and customers may be based in any corner of the world and need to have superior viewing experiences wherever they may be.

Furthermore, each country or region will have their own set of rules and regulations, time zones, languages, currencies, customs and tradition, as well as acceptable and unacceptable norms. Any channel that wants a smooth sailing must know and respect the uniqueness that governs each place.

This is where Geo-location Testing gains great significance because it's not just the technology that needs to be taken care of but also legal and other requirements that need compliance. All this comes under the purview of Geo-location Testing.

ABSTRACT

The galloping inter-connectedness in the world today, along-with the immense competition among the ever growing number of Web and Mobile Apps, has brought in a burning need to ensure that apps give users superior viewing experiences wherever they may be located.

Geo-location features are being built into most Web and Mobile Apps across the spectrum of Navigation, Travel, Weather Forecasting, Banking, Shopping, E-commerce, Social Networking, Health and Fitness, Gaming, Entertainment, Dating, and in fact almost every conceivable human need! Users today are increasingly using their smartphones for GPS and location finding services. In fact it is found that every third adult American, uses Geo-location services at least once a week.

In simple terms Geo-location Testing consists of ensuring that the app works as per user expectations wherever they may choose to be, and simultaneously meets the legal and other requirement of each country or region that it caters to.

Geo-location Testing can be done in various ways, the more widely used of which are listed below:

• Crowd Testing Platforms.

• Virtual Private Network (VPN) Services.

• Geo-location Testing Tools like Google Chrome Developer, BrowserStack and Appium.

• Automated Geo-location Testing Platforms.

Of these, the Automated Testing Platforms are highly recommended from the app's safety and security point of view and also because they provide an all-inclusive, one stop testing space which covers not just Geo-location Testing, but the whole gamut of testing needs. Furthermore they also lend speed, accuracy, reliability and convenience to the testing process.

This whitepaper delves into the world of Geo-location Testing, explaining its relevance and exploring ways in which to achieve this important requirement, that has gained immense significance in the modern world.

UNDERSTANDING GEO-LOCATION TESTING

Let's begin by first understanding what Geo-location Testing is, and review its relevance in the technological world.

Geo-location Testing is the testing of a software application for various geographical locations, to ensure it works as it should across the world, and simultaneously ensure that it meets the legal and other requirements that are relevant to each place. Geo-location Testing is basically checking the efficacy of the software for each and every geographical location that the app is likely to be used in. In short, it checks the app's performance for IPs located at various places.

When speaking of Geo-location it becomes abundantly clear, that the latitudes and longitudes are not just the subject matter of a Geography class, but gain significance in the technological world too. App data should adapt to the place or region in which the app is being used, in order to give the users information pertinent to the place in which they are located.

For an easier understanding, here are some examples of Geo-location applicability. When a travel app is accessed it should automatically display the user's current location so as to detect the closest available vehicle. Similarly when a search is done for locating a Restaurant, Bank, Petrol Pump, Training Institute or anything that is needed, it is once again the Geo-location feature that throws up the right results. Shopping Apps use automatic Geo-location detection, as well as give users a chance to enter the name of the desired town or city. Obviously, the wrong location will give wrong results of pricing and availability of products, which are bound to differ for different places.

Google Chrome and many other apps often ask permission to access user's location. Users may also choose to switch off Geo-location data if they don't wish to be tracked. Yet others may specifically keep this data active especially when traveling alone to new places or traveling at night, so that their near and dear ones can know where they are.

The Geo-location complexities increase when it comes to Banking, Insurance and other such apps, where the time zones, languages, currencies, rules and regulations change. This can get really complex, as countries may have legal requirements which may be different from others. Hence an app which works perfectly well in one country or region could still run into legal hassles in other places.

There are innumerable apps that use Geo-location features and in order to provide a deeper understanding of the extent to which this feature is already used, a few of these types of apps are listed below:

Navigation and
Location Apps like GPS,
Google Maps, Waze, etc.

Weather Forecast Apps
which are totally
location dependent.

Travel Apps like
Uber, AirBnB,
TripAdvisor, etc.

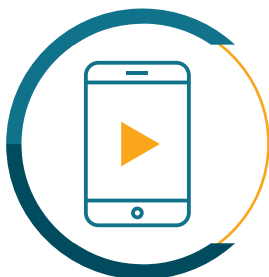E-Commerce Apps
e.g. Amazon, Flipkart etc.

Banking Apps which are
innumerable in number

Social Networking
Apps like Instagram

Gaming Apps
e.g. Pokemon Go

Entertainment Apps
like Amazon Prime
and Netflix which will
offer content based
on region

Dating Apps which
even have a provision
to set the distance range
that you wish to choose
your date from!

Health and Fitness Apps
which track sporting activities
such as cycling, running,
swimming, etc., by using GPS data.
A Smart-watch is one such example.

This listing is not exhaustive but only indicative of how widely used the Geo-location feature is. In fact, for some of these apps, this feature is like a lifeline. A mismatch in the location detection can defeat the very purpose of these apps.

Furthermore, smartphone users use their smartphones for searching for data of every kind; locating various kinds of outlets ever so often; using tracking features for their online deliveries; using GPS for travel, etc. and therefore, Geo-location Testing has a very important role to play for most apps today.

For businesses too, the Geo-location feature can help track user tastes and preferences, providing valuable information for location based product offerings, and strategizing ad spends based on this useful information.

Geo-location data can also be a security help, especially in monetary transactions which capture the place, date and time of transactions thus helping to detect fraudulent access.

From the preceding information, it becomes amply clear that Geo-location Testing is something that just can't be ignored and with this, the next important thing is to understand the challenges of Geo-location Testing and the solutions for the same.

OVERCOMING GEO-LOCATION TESTING CHALLENGES

The most obvious challenge of Geo-location Testing is the mindboggling space that has to be covered, because it involves testing across the world. Having one's own people visit different part of the world for testing, will cost a bomb, be extremely time consuming and is highly impractical. There are more practical ways to achieve efficient Geo-location testing, but without a doubt the technology aided methods are the best way forward. This paper will discuss the more commonly used methods and review their merits and demerits.

01 CROWD TESTING PLATFORMS

Under this method, the app is made available for people across the world who are willing to be part of the testing team. They can download the app and test it for various criteria like speed, accuracy, reliability, compliances, user friendliness and a host of other recommended and/or desired aspects. User testers can be contacted through Crowd Testing Platforms like Utest and Testilo. GitHub is also an excellent tool through which testers can be contacted in different parts of the world.

However, this method involves trust and security issues which are both grave concerns. The reliability of unknown testers is definitely a question mark. Apart from this there are immense risks associated with sharing sensitive information like the source code which can be misused or shared with competitors.

02 VIRTUAL PRIVATE NETWORK (VPN) SERVICES

VPNs provide the facility to change the current IP location and access locations in different parts of the world anonymously. VPN services have thousands of servers in many different countries which can be of great help for Geo-location Testing.

However, there are efficiency related issues which are associated with VPNs. In addition, there are also chances of being blocked out by the applications that are being used to get data from. This can cause interruptions to the testing process and delay the outcomes.

03 GEO-LOCATION TESTING TOOLS

There are also various tools available for Geo-location Testing - a few of which are listed below:

i. Google Chrome Developer Tools:

Since Google Chrome has in-built Geo-location features, Geo-location Testing can be done using the developer tools available on Google Chrome to change the location as desired.

Location can be changed by simultaneously pressing Ctrl + Shift + P (Cmd + Shift +P). Thereafter, type "Sensors" to open the sensors list. Then select "Geo-location" and choose the desired location from the list that will be displayed.

ii. BrowserStack

Another Geo-location Testing Tool is BrowserStack which again has Geo-location Testing features that enable testers to choose different locations from wherever they maybe. BrowserStack also has features like Geo-tagging, Geo-targeting, Geo-fencing, Localization Testing etc., which expand Geo-location Testing abilities.

iii. Appium

Appium with its IP location feature is another good tool for Geo-location Testing and in fact is great for automating it. By choosing IP addresses from various locations across the world, user behavior can be simulated for testing both Web based Apps and Mobile Apps.

04 AUTOMATED GEO-LOCATION TESTING PLATFORMS

The fastest and most convenient way to get Geo-location Testing done is to test on an all-inclusive automated platform which is designed to do all testing including Geo-location Testing, on a single platform. There are various such platforms that offer these services for Web based Apps and Mobile Apps. For Web based Apps one such platform is AQM Technologies. For Mobile App Testing a fully automated platform like BOTm offers easy access to Geo-location Testing, along with the entire gamut of testing including Regression Testing, Accessibility Testing, Performance Testing, etc. The advantage of a platform like BOTm is that it gives instant access to the most popular real devices in a secure and public cloud. Various end user experiences can be replicated by choosing different IP locations to test on. This automated Geo-location Testing is an excellent way to authenticate various settings related to time zones, language, currencies, compliances and other such parameters.

As can be seen, Geo-location Testing is a must for most apps and there are plenty of options to choose from. However, considering the need for speed, convenience, security and accuracy, it is obvious that a secure, fully automated platform is undoubtedly the best choice.

CONCLUSION

Technological innovations have made the world more than ever inter-connected today. There have been sweeping digital advancements that have truly made the world a global village. The level of competition for viewer attention is high and so no app that wants wide usage can ignore the demands of Geo-location Testing.

Users want superior viewing experiences wherever they are located and an app that does not cater to the user's location will have no takers there. At the same time, existing users may choose to be located anywhere in the world and if the app does not serve them in their destination of choice, they will abandon it. Apps must take care of Geo-location Testing which should cover different technological environments as well as cater to the languages, time zones, currencies, legal and other compliance across the world, if they want to attract and retain users.

While choosing the method or tools for Geo-location Testing, care should be taken to ensure not just that user's expectations and country's requirements are met, but also that the app's reliability, safety and security are not compromised. Misuse of the source code which is so vital to the app can be a killer. Hence our take is that it is best to go in for a reliable Fully Automated Testing Platform where along with Geo-location Testing all other testing needs are also taken care of. This is the safest, fastest and most convenient way to get Geo-location Testing done.

For Mobile App Testing, BOTm is a good centralized option for getting Geo-location and in fact the entire spectrum of testing done. Visit www.botmtesting.com and sign up for a Free Trial.

GET IN TOUCH

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BOTm is the accelerator BOT for automated and manual testing of mobile applications - developed for both Android and iOS devices.