

Apple iPhone Tracking Your Every Move?

eDebate

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PROBLEM DEFINITION

Over the past few years, the world of technology has been blooming, with everything becoming portable, faster, and smaller. With each new model or version of technology or applications, more complex tasks are being simplified to increase user comprehension. The cell phone has become an item that society cannot live without. It is no longer solely a hand-held device for you to make a quick call, but rather a miniaturized computer, called a Smartphone. The Smartphone that started the craze was the Apple iPhone, which allows users to surf the web, use the GPS, play HD games, watch full-length feature films, send text messages, and of course, make phone calls. It was such a success because it was so well designed, compact, and the first phone to launch the exceptionally popular App Store.

The issue in question with this Smartphone, along with many of its competitors, is that it has the ability to track the users location throughout the day, without the consent of the user, in many cases. Researchers at the University of Exeter discovered that the iPhone keeps detailed records of a user's whereabouts for up to 10 months or more. The researchers stumbled upon the file by accident because they happened to notice many latitude and longitude positions that had a specific time stamp. The users never knew they were being tracked on a regular basis, and those who had supposedly disabled the location tracking function were still having their movements archived by Apple against their will. It really becomes an issue when Apple still documents the locations of users who have chosen not to allow that application to run on their phones. Is it ethical for Apple to offer a product that does not allow the user to turn off its tracking and location

recording devices, without first getting consent from the user to obtain and record such information?

HISTORICAL CONTEXT

In 2007, Apple released the iPhone, which would revolutionize the evolution of the smart phone. Since its debut at the MAC World expo, enthusiastic customers all around the world have purchased millions of iPhones. Many companies, like Samsung, have created “copy-cat” versions to keep up with the fast-evolving industry and other competition. The iPhone’s sleek and elegant design is the culmination of the technology that has evolved since January 1975, when the Altair 8800, the first personal computer was released. Before then, computers were reserved for businesses or large corporations, not the general public; however, the Altair 8800 was primarily purchased by computer enthusiasts who would assemble it themselves. People who purchased the computer soon found that it didn’t do anything because it didn’t have a keyboard or monitor, just switches and lights, but that didn’t stop dedicated individuals like Bill Gates, Steve Jobs, Steve Wozniak, and Paul Allen from experimenting with it (Cringley). From their efforts rose Microsoft and Apple, two major companies that expedited the evolution, commercialization, and accessibility of computers.

Steve Jobs and Steve Wozniak created the Apple 1, followed by the first packaged computer, the Apple 2, which minimized the number of chips used on the circuit board and made the computer faster and more powerful (Cringley). As the years continued to pass, personal computers became more specialized with larger monitors, more applications, and sleeker designs. Computers and technology facilitated daily life to the point that people wanted portable personal computers, which influenced the creation of

the laptop and the specialization of the cell phone into the internet-friendly, music-playing Smartphone.

The first smart phone attempt was the IBM Simon, released in 1993. It was extremely large and heavy but it allowed the user to call, text, and fax with a basic touch screen to dial in phone numbers (Reed, 2010). Throughout the years, the Smartphone became slimmer and lighter and the iPhone was such a craze because it was incredibly innovative and effectively combined its elements to make it user-friendly. Important features that distinguished it from other Smartphones were the “pinching” zoom on the touch screen, the integrated App Store, and the motion sensor for games and shuffling music, among many others (Frommer, 2011). Although companies like Samsung, HTC, and Motorola have adapted their phones to look and run similar to the iPhone, it continues to sell more products every year. Unfortunately for Apple, Google’s Android smart phones have greatly increased the number of users because many service carriers offer its services, while the iPhone was exclusively sold by AT&T, and very recently Verizon Wireless.

LEGAL CONTEXT

The advances in technology have greatly increased accessibility to social networks, email, the Internet, and texting “on the go” with incredibly sophisticated smart phones. With so many applications, like Google maps, Mobile Me, and social profiles, privacy has greatly decreased and personal information is more accessible. Many applications or smart phones require accepting terms of service and some personal information is stored while the service is in use. The maps application on the iPhone, and other smart phones, ask the user if they want to use their location in order to get

directions and the user has the option of turning that function on and off at their discretion. However, the iPhone has been tracking the whereabouts of its users even if the users don't want their location recorded. This is an invasion of privacy, which is "the ability of an individual to reserve their right to disclose information about himself/herself/themselves and share that information upon their choice," (Kiprin, 2009). If an application wishes to monitor users for research or other services, it needs to have the consent of the user and not disclose personal information to third party companies. Here is Apples Privacy Policy:

"You understand that by using the Service, you consent and agree to the collection and use of certain information about you and your use of the Service in accordance with Apple's Privacy Policy. You further consent and agree that Apple may collect, use, transmit, process and maintain information related to your account, and any devices registered there under, for purposes of providing the Service, and any features therein, to you. Information collected by Apple when you use the Service may also include technical or diagnostic information related to your use that may be used by Apple to maintain, improve and enhance the Service. For more information please read our full privacy policy at <http://www.apple.com/legal/privacy/>. You further understand and agree that this information may be transferred to the United States and/or other countries for storage, processing and use by Apple and/or its affiliates."

STAKEHOLDERS

iPhone users are ultimately the primary people affected by the actions partaken by Apple. Apple was violating users privacy, by not letting its customers know that their

mobile devices were constantly tracking their locations and storing these locations on the users iPhone for a period of up to 10 months. Not only were the locations being saved but also the file on which the locations were stored remained on the phone unencrypted. The fact that the file remained unencrypted poses a huge security risk for users. If an owner of such device were to lose their phone or if it were to get stolen, the person who now holds the phone can easily have access to the previous owners locations he has visited. Even easier, if a hacker can get remote access to someone's iPhone, he/she is able to figure out places you have frequented.

COMPETITIVE ANALYSIS

The Google Android platform also tracks data that can be used to determine location. According to (Angwin, 2011), which includes original research; the location dependent data includes a tag that can identify a particular phone. The iPhone location tracking has inspired Android users to see what information is on their phones or devices and many have shared how to download the cache on the Android system to the public through the use of websites and blogs (GitHub, 2011). It also says that the android only records the recent information, not as long term as Apple; although, Apple claims to have reduced the amount of time location information is stored (Apples Q&A on Location Data, 2011)).

Some companies are selling devices that intentionally track location; in fact, many times without the knowledge or consent of the operator of the vehicle or device (GPSTrackit.com, 2011). This is likely too different from the iPhone to be a useful example but, the Tom Tom, a GPS Device, has been sending speed and location information to the police, without the owners knowledge or consent.

ECONOMIC FACTORS

After the thousands of iPhone users became aware of Apple tracking their every move, thousands of lawsuits arose in countries all around the world. One country in particular, South Korea, had a group of over 27,000 people create a joint lawsuit to receive one million dollars each for their troubles (Olsen, 2011). However, Apple still denies that they are tracking the exact location of their users; rather, they say it is a bug in the software (Satariano, 2011). Apple claims that “The iPhone is not logging your location, rather it’s maintaining a database of Wi-Fi hotspots and cell towers around your current location, some of which may be located more than 100 miles away from your iPhone to help your phone rapidly and accurately calculate its location when requested,” (explorer.com). This was however; days after the scandal hit the news. Apple has a history of waiting a few days to answer, and only release information or statements to a specific news source, as a means of damage control. Unfortunately for them, social networking sites, like Facebook and Twitter, have and will create issues for Apple, and many other companies, because they enable users to spread news, opinions and complaints faster than companies can respond to the problem at hand (Ingram, 2011). Constant communication between consumers, through social networking, can have a detrimental effect for companies, if they have too many negative reviews. The most prominent issue with Apple is the invasion of privacy that the location tracking application creates. Although the exact geographic location is not calculated, according to Apple, the nearby towers and Wi-Fi networks can give a pretty accurate location. There wouldn’t be an issue if Apple allowed the user to disable the feature, like Android phone

users do. Android allows users to choose if they want their location used, otherwise, it doesn't enable the function any of the map applications. The Federal Communications Commission (FCC) oversees the actions of Apple, therefore; most products have to receive accreditation through the United States National Institute of Standards (NVLAP) for self-declaration, but only for products that don't transmit signals, like the iPhone and other wireless services (Apple.com).

TECHNOLOGICAL FACTORS

Since Apple has been collecting data from its users' iPhones, without consent, it has caused somewhat of a panic. Many people that their information being easily accessed because the data file with their archived location information is not encrypted. People have united and taken a stand against Apple's actions, as in the case of the thousands of South Koreans, who are suing Apple since earlier this August. This issue has raised ethical and technological concerns regarding privacy. One concern is that the file, called "consolidated.db", has known to hold a large amount of data collected from Wi-Fi access and nearby cell towers. Those towers triangulate and record the user's whereabouts in an easily readable form in a user's iPhone. This means that virtually any other program or user with access to the iPhone can potentially look through it. The worst-case scenario, where the consequences could be serious, is if it ever fell into the hands of a stalker or a jealous spouse.

Although Apple has confirmed that people can disable the tracking function in their iPhones, tests conducted by the Wall Street Journal, proved otherwise. The Journal claimed that the iPhone doesn't track the exact coordinates and doesn't specify how much time a person stayed in a particular location. However, according to Pete Warden,

one of the researchers who discovered the location-tracking file, one way around this is for users to choose encrypted backups. This would prevent other users or other programs from looking through their data, but it would mean that a copy of the file would still remain in the device. Another option for users is to jailbreak their own iPhones and download an applications like *Untrackerd*. These applications, which were released by the jailbreak community in response to Apple's silence regarding the issue, clean the hidden file every five minutes and remove all data that is more than 30 minutes old.

Apple's collecting of data from its users' iPhones without consent has caused somewhat of a panic among people who worry about their information being used against them. People have taken a stand against Apple's actions, as in the case of the thousands of South Koreans suing Apple over its location tracking in iPhones earlier this August. This issue has raised ethical and technological concerns regarding privacy. One concern is that the file, called "consolidated.db", known to hold a large amount of data collected from Wi-Fi access and cell towers, which records the user's whereabouts, it is stored in an easily readable form in a user's iPhone, and any other program or user with access to the iPhone can look through it. Even worse, the consequences can be serious if it ever fell into the hands of a stalker or a jealous spouse, for example.

Another concern is that, despite what Apple has said about its customers being able to turn off the tracking device in their iPhones, it seems there is no way for the user to turn it off and prevent their phones from collecting data, according to a test conducted by the Wall Street Journal. However, according to Pete Warden, one of the researchers who discovered the location-tracking file, one way around this is for users to choose encrypted backups, which prevents other users or other programs from looking through

their data, but a copy of the file will still remain in the device. Another option for users, as suggested by the website freeiphones4me.com, is to jailbreak their own iPhones and download an App called *Untrackerd*. Released by the jailbreak community in response to Apple's silence regarding the issue, it cleans the hidden file every five minutes and removing all data more than 30 minutes old.

RECOMMENDATION

Our recommendation is to have the Federal Communications Commission enforce a policy, which will guarantee that mobile device designers will not violate users privacy by collecting users locations without their knowledge and/or without including a way for users to turn off tracking features. In order to fully protect the privacy of users, any company who designs a device for public use and whom includes location-based services within their device should include a method to turn off these services. If users agree to use location-based services, any tracking data that is obtained using this service and needs to be stored on the device must be encrypted. If tracking data is uploaded to companies servers for research and/or improve the betterment of the device services, then this data cannot be sold, shared, or distributed to any third party companies or persons without the sole owners consent.

PROS & CONS

Here are the pros and cons of our recommendations of our new policy for the FCC to take a look at. The pros of our new policy are as follows: 1) it would allow users to have more privacy; 2) it would allow a user to turn off the services; and 3) it would prevent information being sold or distributed to third parties.

One of the pros to the new policy is that it would secure the user's privacy. The

person will no longer have to worry because they will have the freedom of choice to turn on and off the location services. This policy will also give the user a sense of physical security. If a user was constantly being tracked with his or her location services and a third party hacked into his or her file, then it would make it possible for the hacker to find out where he or she is going to be at a certain time of the day. Another scenario is if the hacker gets into that file, then he or she will know when that user goes to work, or when that user picks his or her kids up from school, or even break into the user's home while that user is away. Another pro to the policy and recommendation is limiting the amount of advertising information about the consumer. Though Apple claims that the company and its partners cannot use the data they collect to personally identify the user, the user would still receive specific advertisements depending upon what websites the user visits, or the places where they have been to previously. By allowing the user to decision to turn off the location services, it would prevent the user from receiving unwanted and intrusive advertisements. Another pro to the policy is that it would make it so if a user does decide to have the location-based services, then the user's files will be encrypted, thereby making it less likely for the hacker to get the user's sensitive information, such as the user's location throughout the day. This policy gives the user a choice and lets them make the decision instead of the phone company.

Aside from the pros previously mentioned, there are also cons to the new policy. One of the cons that come about with this new policy is the idea that it will limit commercial opportunities. Companies will no longer be able to receive feedback and location data about its users, which could make the target audience for business harder to find the direct consumer outlets, and could possibly lead to some loss in sales for a

company.

The policy would also make it harder to track down a user's lost phone. Many phones have services that use location data to track down a lost or stolen phone. However, should the user decide to turn this off, it would lessen their chance of recovering their lost phone. A solution to override this is for a developer an app for that purpose only, which will then allow the user the choice to let the company to turn on the location services for this one exception upon the user's request. There are a few apps out there that serve this purpose, but the drawback is that they all require the user to enable location services.

Going off of that, this brings us to our final con: the policy would not let the user use all the features on the iPhone or other phones like it that use location-based services, like GPS or certain apps that will allow the user to find his or her phone. Using a phone and not being able to use all the feature turns into a waste of money for the user, and so to be able to let the user decide what apps he or she would let the location data service be turned on would be a great idea and encompass our new policy.

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