Google Glass: A Look To The Future.

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Introduction

The Google glass is a wearable technology that was first revealed in the summer of 2012. Developed by Google, this device is essentially a headworn technology that can enable people to perform the same function that they perform on their personal computers and mobile phones. Worn just like the normal eye spectacles, the glasses allows you to access "your emails, calls and other notifications so you don't have to miss a beat" (Butow and Stepisnik, 2014). The glasses received a lot of speculations, with many wondering why people would want to wear a computer on their face. This paper delves into such matters, whereby it will be discussing the Google Glass technology in details. The paper first gives a background of the technology, explaining recent developments in the IT field and the inspirations behind the innovations. It then goes ahead to explain the technology and its benefits. As any innovation out there, there must be some legal and ethical concerns fielded, issues that will be delved into by this paper. Security has also been a concern about recent technological developments and thus this paper will be determined to highlight some of the security concerns that have been raised up concerning this technology, as well as its effects in the social spheres, since this device is to be used by people who live in societies. The general purpose of this paper is to analyze this development critically for the benefit of its users and developers.

Background

Recently, the world has been clouded with massive technological advancements. Right from social networking, to smartphones, and now the wearable technology like Google Glass. This is not to say that technology has not been advancing since the first computer, but rather the pace

and the type of innovations in the contemporary world is rather at a fast pace and less caring than before. The fast and active technological developments are related to the ready availability of resources in terms of finance, machinery, labor, expertise, will among other factors. The contemporary developments in information technology have taken a huge turnaround from the most reserved developments of the yester years. Present technologists are more and more inspired by various factors in deriving new technologies in the market. However, in the era of rapid technological developments, a lot remains to be answered. People are becoming more and more critical and careful of the technologies that they interact with. The Google glass, though not yet commercially available has received immense attention since the announcement of the first Google Glass in 2012. The attention is not without suspicion and mysteries. Therefore, this research seeks to demystify the technology behind the Google glass, with an end objective of informing people all about it and help them make informed choices when interacting with this device.

Potential Benefits

Any invented technology normally has some potential benefits behind it for it to justify its development. Since the Google Glass is still a prototype under testing, its benefits are mostly potential. The unique design of the device has been praised by most people who have no time to use their hands, probably because their hands are engaged in other duties. The glasses offer quick bursts of information whenever you need any information, but your hands are tied down to something else, e.g. while cooking. For chefs, who are constantly engaging their hands in control of cooking materials and balancing heat, Google glasses can come in hand whenever they want to access any information via the internet. For example, they can access a recipe over the internet without soiling their books or Macs with their greasy hands. It can enable multitasking in a very

sophisticated way. Furthermore, proponents of the glasses have praised it for its real-world applications owing to its potentiality. In the healthcare industry, the power of its camera "can be used by nurses or doctors to scan barcodes and NFC tags to identify patients, bring up medical records and verify the correct medication and dosage is being applied" (Suleiman, 2014). Interestingly, surgeons in some selected hospitals have already started using the Google Glass to transmit real-time classes in imparting knowledge to medical students. It also allows to record surgeries that can be used later to find out, for instance, what went wrong in the surgery room.

According to a trial done by Virgin Atlantic, the glass was found to be beneficial in many ways. The glasses were found to be useful in providing more personalized customer service to its customers in the upper-class wing. Additionally, the glass can be used by flight passengers "to access information about their flight, as well as details of the weather and suggested activities at their destination" (Suleiman, 2014). The trial also found that the glass could be used to provide the dietary requirements of a passenger, a determining factor in choosing a preferred airline by many passengers. The glass has also been beneficial in extreme sports such as skydiving and biking. It has enabled the recording and sharing in real time of the athlete's experience and feelings. The ability of the glass navigate has also been noticed. As for explorers, the glass will be an easily wearable technology to take the lead you to whichever destination you seek, perfectly relaying the route sought for before your eyes.

The glass has made an important breakthrough in the world of disabilities. The deaf, the blind and others suffering from sensory awareness related difficulties can now use Google Glass to enhance communication. "The Smart sign app is designed to enhance communication between parents and their deaf children" (Suleiman, 2014). This has further reduced the complexities of parents teaching their deaf children sign language. The glass has further proved to be capable of

being eyes to the blind or with partial sight. Its voice and touch capabilities have proved to be able to guide people with sight difficulty in detecting obstacles and access other relevant information.

Legal, ethical, and security issues

Google Inc. has had a couple of privacy implications about its Google Glass innovation. People have expressed their concerns about people wearing Google Glasses to record them without their consent. The glass can easily take pictures and record videos without someone else knowing. Tsukayama (2014) expresses this when she says that "if you pass by someone who is recording, or if you're not looking too closely at the wearer's face, it is a tricky thing to figure out." Even though it lights up when in use, it is hard for someone to know of what use the device is filming. Google is trying to counter this by educating its prototype testers of practicing good etiquette when using the glasses. Google has also been urged to avoid adding facial recognition technology to the glass. With the facial recognition software, whoever wears the glasses can easily identify people by taking a screen shot of their faces and running it through the software. This can easily reveal information about people without their consent. The identification of strangers in public without their consent is against the privacy rights. This drew the attention of the local and state lawmakers, making the company put restrictions of not adding the facial recognition software in their glasses. The device also has capabilities of recording private conversations. As long as it's within reach of what the other person is saying, the device can tap into conversations without the persons concerned knowing, which is another breach of the privacy rights, as enshrined in the Fair Information Practice Principles (FIPPS).

Google glasses made enemies with movie theaters and other areas where recording is banned. There have been disputes about the wearing of glasses in movie theatres where one may be

restricted of filming, since they will be making illegal copies of the film. The legality of the glasses has been questioned in a number of countries, particularly Russia, Ukraine and other post-Soviet countries. These countries have strict laws regarding spy gadgets that can record videos, audio or take photographs in an inconspicuous manner. Its abilities of recording inconspicuously, have led it to be banned in various sectors even before it became available. This has largely been due to its privacy violation capabilities and strict laws in place. "Facilities, such as Las Vegas casinos, banned Google Glass, citing their desire to comply with Nevada state law and common gaming regulations that ban the use of recording devices near gambling areas" (Metz, 2014).

The security of glass users has also been questioned in case the device is stolen or lost. A user that has some private documents in the device can easily loose the information to a third party, information that can be used for malicious purposes. Google, however, are in the process of developing a locking system that will restrict unauthorized access to the device. The device also can be remotely reset to avoid tampering any important information in case it is stolen. Furthermore, being a costly device, security officers have lamented about the possibility of the device increasing the crime rates as muggers and robbers try to access it for profitable purposes. Cyber Forensic experts have also placed a red light against using the google glass due to its ability to steal smartphone and tablet passwords."The glass has a software program that can track finger shadows as someone types in their password, which then converts the tracked shadows into the keys they were touching, allowing them to catch the passcodes" (Arthur, 2013)

Social concerns

The glass, like many other recent technological devices, has been criticized for being against normal social interactions. People wonder how one can engage with another while wearing the google glass. The glass restraints a conversation even when not in use, since it can atleast allude some level of awkwardness, while talking to another who is wearing a smart computer in their head. It further adds to social seclusion since people will be more comfortable interacting in the virtual world rather than in the real world. According to Arthur (2013), "the device immerses people in a private environment while in the public sphere."

Further required research

The above legal, ethical, security and privacy issues can be addressed by some modifications of the device. For instance, the code locking mechanism for security purposes will go a long way in helping those who may misplace their Google glasses. Additionally, since the device greatly depends on voice recognition, it will be important for the company owners "to improve and expand the capabilities of this technology to make the product successful long-term"(Metz, 2014). It will also be appropriate if the device focuses more on eye-movement focused applications that will follow the eye hence controlling the camera.

Conclusion

The Google glass is no doubt a massive technological development in the IT market. However, for the company to achieve their objectives with the device, they need to be on toes to rectify and address the various concerns. It should be aware that its competitors are watching, including

Apple, Microsoft and other big players, wondering whether they should come up with their own glasses or integrate with Google, or do nothing at all, which is less likely.

References

Butow E., Stepisnik R. (2014) *Google Glass for Dummies*. John Wiley & Sons. NJ.

This book written in 2014 gives an insight into what Google Glass is. It is more of a guiding book on how to use google glass. It also gives an insight into some of the uses and applications of the devices.

Charles Arthur (2013). "Google Glass: Is it a threat to our privacy?"*The Guardian* (London).Retrieved March 1st, 2015.

Charles Arthur is the main reference point of the legal, security and ethical issues of Google Glass. His article in the Guardian explains some of the suspicions and issue surrounding this innovation.

Metz Rachel (2014) "Google Glass Is Dead; Long Live Smart Glasses." *CNET Magazine*. Retrieved from http://www.technologyreview.com/featuredstory/532691/google-glass-is-dead-long-live-smart-glasses/ on 1st March, 2015

Metz Rachel gives a critical analysis of Google Glass. She tries to tear apart the device by stating some of its failures. It is helpful in understanding some of the main concerns about the device.

Suleiman K. (2014) *Google Glass: 10 use cases for wearable technology*. Retrieved from http://www.itpro.co.uk/mobile/21581/google-glass-10-use-cases-for-wearable-technology/page/0/1 on 1st March, 2015

Suleiman's article is reliable on the benefits of the Google glass. It explains sufficiently how the glass has been tested in various sectors to aid in service delivery.

Tsukayama H. (2014) "Everything you need to know about Google Glass."*The Washington Post.* Accessed at http://www.washingtonpost.com/blogs/the-switch/wp/2014/02/27/everything-you-need-to-know-about-google-glass/ on 1st March, 2015

Tsukayama provides a rather chilled examination on the google glass. For first timers of the device, her insights will be reliable since she gives us the basics of google glass including how to wear them and people's perception. She also touches on the main concerns of people about the glasses.

â€œGoogle Glass is a tiny computer that sits in a lightweight frame and rests neatly above your eye. And it makes exploring and sharing the world around you a lot easier.â€ The glasses are still being tested.Â Tech Company Intel Looks Toward the Future. The technology company Intel recently held a demonstration of some of its new devices in San Francisco. One device measured how alert a driver was at the wheel. â€œTodayâ€™s Google Glass will look antique in a few years, similar to looking at a mobile phone from 13 years ago today,â€ Kraft says. For example, a traveler to Greece could use smart glasses someday to get an audio tour of the Acropolis, while reading about Greek history or Greek soliloquies on an app. The glasses could also connect to social networks to share information with friends.Â (Google Glass currently costs $1,500 for the early adopters.) An Eye on the Future. Analysts say that smart glasses are still in their infancy. The future will likely involve customizing them for particular consumer uses and industries, similar to how many developers are already rolling out technologies specific to health care. This got us thinking: how will Google Glass will look at the end of the decade? Will everyone be wearing one and if they are, what will they be wearing? How powerful can Augmented Reality become?Â One of the most intriguing, future thinking concepts for Glass came from Accenture's recent experiment with Philips' medical division to create an app for medical professionals, the results of which you can see in the video below. "The exciting thing about the Philips video is that we were actually able to integrate with a medical device and display that patient data, in real time, within the physician's field of view. That's a situation where seconds matter and we're saving lives, the physician no longer has to turn his head or turn away just to check vital signs Yes, Google Glass â€˜failedâ€™ to capture mass market interest, and [Nest founder Tony] Fadell might want to distance whatever comes later from the Google Glass name â€” Glasshole will be hard to get away from. But in the industries where the technology has made a dent â€” like medical application (see Wearables, earables, eyeables: Welcome to the next wave of computing) â€” the response was very positive. Google Glass Redux.Â In April 2014, Google started a â€œGlass at Workâ€ program that highlighted some of the early developers. And that year when a few people from X visited Boeing, which was testing Glass, they reported that their minds were blown by a side-by-side comparison of workers doing intricate wire-framing work with Glassâ€™s help.