

Google Glass

¹Shubham chhabra, ²Shubham kumar patel, ³Vishal Sharma, ⁴Toshar

^{1,2,3,4}(Dept of computer science, Dronacharya college of engineering, New Delhi, India)

Abstract: The emergence of Google Glass, a prototype for a transparent Heads-Up Display (HUD) worn over one eye, is significant. It is the first conceptualization of a mainstream augmented reality wearable eye display by a large company. This paper argues that Glass's birth is not only a marketing phenomenon heralding a technical prototype, it also argues and speculates that Glass's popularization is an instigator for the adoption of a new paradigm in human-computer interaction, the wearable eye display. Google Glass is deliberately framed in media as the brainchild of Google co-founder Sergey Brin. Glass's process of adoption operates in the context of mainstream and popular culture discourses, such as the Batman myth, a phenomenon that warrants attention. Project Glass is a research and development program by Google to develop an augmented reality Head-Mounted Display (HMD). The intended purpose of Project Glass products would be the hands-free displaying of information currently available to most smartphone users, and allowing for interaction with the Internet via natural language voice commands. These glasses will have the combined features of virtual reality and augmented reality.

Keywords: Heads up display, instigator, and head mounted display

I. INTRODUCTION

The Google Glass is a technology that has been long-rumored about. As the name portrays, the Google Glass is a pimped out pair of glasses. And by pimped out, I mean it comes with a optical head mounted display (OHMD) which allows the wearer to see through and look at projected images coming from a small component on the glasses themselves. The Google Glass also has several other capabilities: users can ask the headset question, prompt it to Google words, take photo and video by the prompt of your voice, get directions and view a GPS, and even participate in group web conversations via a Wi-Fi connection. The Google Glass takes "hands-free" to a whole new level.

II. BACKGROUND

Released to a group of selected individuals called Explorers in February of this year, a few lucky people were able to experience the Google Glass and provide feedback to the developer behind this next big thing; however, the first batch of the Google Glass did come with a hefty price of \$1500.00.

The current edition of the Google Glass now weighs less than the average pair of sunglasses. In 2011, the first Google Glass prototype weighed nearly eight pounds (Miller, 2013). In 2012, after the eight-pound prototype but before the Explorers trial run, Google Glass made appearances on the Gavin Newsom Show (Baldwin, 2012), at a Google Input/Output seminar where those in attendance were able to watch a live feed from a skydiver (Velazco, 2012), and even at a hospital in Madrid, where "the Spanish doctor Pedro Guillen, Chief of Trauma Service of Clínica CEMTRO of Madrid, became the first physician in the world to broadcast a surgery through the use of Google Glass" (Riggins, 2013). From the prototype in 2011 to the Google Glass Explorer version in 2013, Google doesn't seem to be slowing down any time soon.

III. POTENTIAL BENEFITS

It goes without saying that most, if not all, tech savvy inventions are created for their potential benefits; the Google Glass certainly comes with plenty. For example, its camera and video recording features make it effortless to snap a picture or

record a short video. Just by looking at a sunset or watching a Broadway show, Google Glass is able to identify the direction its user is looking, automatically focus the lens, and then when it hears the words 'OK Glass, 'shoot' or 'video' or 'record', it does just that. No picking up a phone and swiping the unlock bar, putting in a fancy code to allow access, or finding the right button to push. Even with Siri, one of Apple's latest additions to its iPhone, has to be called to the screen by holding down the home button before she, or he with the new iOS 7 software, is ready to help. All the extra time it took to take a picture or record a video on a smartphone, simply because they are all controlled by touch, could waste valuable seconds, allowing a picture perfect moment to slip away.

Long gone are the days where maps were used to navigate the world. Everyone now relies on the GPS. Whether that GPS is located on top of a dashboard, comes standard on the latest automobile, or is an app on a phone, none of them compare to the GPS that comes with the Google Glass. Imagine driving down the road and experiencing the following situation. It is a beautiful day outside and the windows are down. You have your printed directions and the map in your hand when, all of a sudden, they are sucked outside. Looking in the rearview mirror, you see that the directions are now in pieces after being run over by a tractor-trailer. No worries, you have your phone! Of course now, you have to pull over before you can Google directions or ask Siri for help. The directions are all pulled up and ready to go but as soon as you start driving, your phone dies. And of course, the car charger is at home. What happens next? I have no idea. But if this unlucky person had been wearing the Google Glass, there would have been no need for the printed map or printed directions, no need to pull over and use the phone, and no need for the car charger. The Google Glass was designed so as not to interfere with the wearer's vision. It was designed to be so sleek that it just disappears. With no vision impairment and its ability to connect to the Internet via cellular towers and a data plan or Wi-Fi, it easily becomes a GPS. Ask the Glass for directions to a local grocery store or even to a restaurant in another state, it is able to literally lay a map over the road in front of you and change it based on your point of view (Honig, 2013).

IV. LEGAL AND ETHICAL ISSUES/SECURITY CONCERNS

Just as it comes with benefits, Google Glass comes with its fair share of legal and ethical issues and security concerns. "Many say that the Google Glass does not raise any new privacy issues, but merely rehashes existing ones in a more prominent way." (Katikala, 2013) Existing issues with almost all of the new technology, whether it be smartphones, tablets, cameras, or computers, include unwanted surveillance and the ability to take discreet pictures and/or video, cheat on quizzes and exams, and a multitude more. How many students have received text messages with test answers or Googled 'Who was the 24th president?' while in class? How many pornographic pictures or videos have been taken and then posted to the Internet by simply clicking the 'send' button? Unfortunately, Katikala was correct in saying that these existing problems will likely become much more prominent.

By receiving the answers to a test, emailing them, and then accessing them via the Google Glass, cheating just became a whole lot easier. The answers are right in front of your face and no one will suspect anything because all you are doing is looking down at the test. With the Google+ Hangout feature, an online chat room that can also be accessed with the new Google Glass, everyone in the group will be able to see what your glasses are seeing. Looking at a confidential file, surveying a house, stalking a group of young students? These can all become new group chat activities.

Many people have already voiced concerns about how simple it would be to record and take pictures discreetly and how much of a security concern that could become, including Congressman Joe Barton, the co-chair of the Congressional Privacy Caucus. Google was quick to address him and this ever-growing concern: "In its letter [to Congressman Joe Barton], Google attempts to explain away the privacy concern by citing some of Glass's basic functionality: When Glass users want to, for example, take a photo, they have to say something like "OK Glass", which, in theory, would prevent them from secretly taking photos." Even though Google Glass is a voice prompted device, people are still concerned as to how to best protect themselves. In addition to Barton and the public's photography concerns, they are more worried about the rumors regarding the proposed ability of Google Glass to have facial recognition software and the legal and ethical issues that would surely come with it. These rumors were confirmed when Google stated "Google has said for several years that we won't add facial recognition features to our products without having strong privacy implications in place. With that in mind, we won't be approving any facial recognition at this time." "At this time" became a focus of the public when it was inferred by Google that facial recognition software would indeed be released, just not yet (Bilton, 2013).

V. SOCIAL PROBLEMS

Technology already seems to be ruling the world. As far as the eye can see there are tablets, iPads, iPhones, Blackberries, Androids, laptops, Macs and Windows. Kids are already texting during school, browsing Facebook and Twitter when they are supposed to be doing their homework, and businessmen and businesswomen are writing emails while driving. Sadie Whitelocks states, "If you're aged between eight and eighteen, you'll spend more than eleven hours a day fixed to an electronic device." Eleven hours a day! That number can only go up with the release of the Google Glass (Whitelocks, 2013) With it easier to create group conversation with Google+ Hangout, asking 'Wanna hang out?' will mean strapping on the Glass instead of going outside and playing a pick up game of football. The proposed facial recognition app and software that has yet to be released could come with a multitude of functions. We could have the ability to pick our friends out of a crowd, see how old someone is and if they are single by connecting Facebook to the facial scanner. It might even be possible to one day learn everything about a complete stranger by scanning their face and then Googling them. There would be no need to use the television, or even a computer, to check the weather, news, or watch a movie. No need for any social interaction at all. Today's society revolves around technology; the Google Glass is only going to amplify what we are already experiencing.

VI. FURTHER REQUIRED RESEARCH

Although the Google Glass has come far from the eight-pound prototype it once was and has now been seen at events like the Vogue Fashion Show, there is still work to be done. For instance, right now the Google Glass does not come with any lenses. While that may be fine, maybe even ideal, for those of us who do not usually wear glasses, the people who do wear prescription lenses or contacts are going to have to wait until Google upgrades the Glass. Because the only members of the general population who have tried the Google Glass are those who applied, were selected, and paid \$1500.00, Google has been considering opening up retail stores where customers would be able to try them on. Google also hopes to start partnerships with major sunglass companies, such as Ray-Ban, in order to further promote their product. (Miller, 2013) As discussed earlier, and perhaps the most important area of research that needs to be focused on, is their facial recognition software. Without the proper privacy requirements and privacy features, Google may lose many potential customers who are afraid of the security risk. Other areas of research, which could serve to benefit the Google Glass, are the incorporation of texting and calling, more colors, and a cheaper price.

VII. CONCLUSION

Steve Jobs left his footprint in the history of technology when he created his Apple products. Google and its executives may be doing the same. Google is already a famous name because of its search engine, email accounts, maps, Google earth, and, most recently, Google Wallet. With the addition of the Google Glass, it may just be enough to push Apple and those like it out of the way and put Google on top.

REFERENCES

- [1] Baldwin, R. (2012, May 29). Sergey Brin Finally Lets Someone Else Wear Google Glass. Retrieved September 30, 2013, from Wired website: <http://www.wired.com/gadgetlab/2012/05/sergey-brin-finally-lets-someone-else-wear-google-glass/>
- [2] Bilton, R. (2013, July 2). Other people's privacy is still the biggest problem for Google Glass. Retrieved September 30, 2013, from Venture Beat website: <http://venturebeat.com/2013/07/02/google-glass-non-user/>
- [3] Honig, Z. (2013, May 3). Google Glass to support GPS navigation, text messages without companion app. Retrieved September 30, 2013, from engadget website: <http://www.engadget.com/2013/05/03/google-glass-gps-text-messages/>
- [4] Katikala, S. (2013, February). 3 New Ways Google Glass Invades Your Privacy. Retrieved September 30, 2013, from Policy Mic website: <http://www.policymic.com/articles/29585/3-new-ways-google-glass-invades-your-privacy>

- [5] Miller, C. C. (2013, February 20). Google Searches for Style. Retrieved September 30, 2013, from The New York Times website: http://www.nytimes.com/2013/02/21/technology/google-looks-to-make-its-computer-glasses-stylish.html?pagewanted=2&_r=0
- [6] Riggins, J. (2013, September 2). Through the eyes of the first Google Glass surgery. Retrieved September 30, 2013, from Smart Planet website: <http://www.smartplanet.com/blog/global-observer/through-the-eyes-of-the-first-google-glass-surgery/13959>
- [7] Velazco, C. (2012, June 27). Google Wins The Internet With A Live Skydiving Demo Of Google Glass (Now With Video!). Retrieved September 30, 2013, from Tech Crunch website: <http://techcrunch.com/2012/06/27/sergey-brin-demos-google-glass-at-io/>
- [8] Whitelocks, S. (2013, September 27). Social media is destroying our lives. Retrieved September 30, 2013, from Daily Mail website: <http://www.dailymail.co.uk/femail/article-2435725/Social-media-destroying-lives-Lovelorn-teens-open-Bling-Ring-author-Nancy-Jo-Sales-technology-s-increasing-hook-culture.ht>