
“Sergey Brin is Batman”: Google’s Project Glass & the instigation of computer adoption in popular culture

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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.

Author Keywords

Computer adoption; user experience; wearable eye display; augmented reality; popular culture; discourse analysis; humanities

ACM Classification Keywords

H.1.2 User/Machine Systems; human factors

General Terms

Human Factors

"I wear a mask. And that
mask, it's not to hide who
I am, but to create what
I am."
Batman

"Broken City, Part 5"
Batman vol 1 624

Introduction

The emergence of Google Glass, a prototype for a transparent Heads-Up Display (HUD) worn over one eye, is significant on several levels. It is the first conceptualization of a mainstream augmented reality wearable eye display playing out in a viral marketing campaign. Google Glass will enable us to capture video, let us interact with personal contacts, and navigate maps, amongst other things. The YouTube concept video "One Day..." that announced its coming on April 4, 2012, has been viewed more than 18 million times [1]. Gracing the face of Diane von Furstenberg, who wore it at New York's fashion week, it is often strategically trotted out for photo opportunities [2]. It has been provocative enough to scare both Apple and Microsoft, who had been issuing patents for augmented reality products of their own [3]. However, most salient of all is the way Google Glass is framed in media as the brainchild of Sergey Brin, the American computer scientist of Russian descent who co-founded Google. Brin is also celebrated in online articles as a real life "Batman," who is developing a secret facility resembling the "Batcave" [4]. This paper argues that Glass's birth is not only a marketing phenomenon heralding a technical prototype, it also suggests and speculates that Glass's popularization is an instigator for the adoption of a new paradigm in Human-Computer Interaction (HCI), the wearable eye display. Glass's process of adoption operates in the context of mainstream and popular culture discourses, a phenomenon that warrants attention.

Background

Google Glass is a prototype for an augmented reality, heads-up display developed by Google X lab slated to run on the Android operating system (see Figure 1).

Augmented reality involves technology that augments the real world with a virtual component [5]. The first appearance of Glass was on Sergey Brin who wore it to an April 5, 2012 public event in San Francisco. Provocative headlines emerged such as "Google 'Project Glass' Replaces the Smartphone with Glasses" [6] and "Google X Labs: First Project Glass, next space elevators?" [7]. A groundswell of anticipation surrounds Glass because it implies a revolutionary transition to a new platform, even though release for developers is only planned for 2013. At the time of our writing this paper, it is not available for consumers who can only see it in promotional materials.



Figure 1 Google Glass

Heads-up eye displays are not new. The *Land Warrior* system, developed by the U.S. army over the past decade, for example, includes a heads-up eye display with an augmented reality visual overlay for soldier communication. Many well-known inventors have contributed eye display technology, research or applications over the past two decades including Steve

Mann (Visual Memory Prosthetic), Thad Starner (Remembrance Agent), and Rob Spence (Eyeborg). Commercially, Vuzix is a company that currently manufactures transparent eye displays.

Science fiction and popular references to the eye display are almost too numerous to list, but most are featured in military uses: Arnold Schwarzenegger's Terminator from the 1984 film had an integrated head's up display that identified possible targets, Tom Cruise's Maverick in *Top Gun* had a rudimentary display to indicate an enemy plane's target acquisition and current G-forces, and Bungie's landmark video game series *Halo* features a head's up display that gives the player real-time status updates on player enemy locations, shield levels, remaining ammunition and waypoint information. In most popular culture uses, a head's up display is transparently overlaid upon the real world. However, in video games, the display is considered to be part of the entire game interface. While many film and television shows are adding HUDs to their storytelling to add a science fiction or futuristic feel, there is a movement in game development away from any artificial HUDs as many consider them to be "screen clutter" and block a player's view of a created world. The video game *Dead Space* by Electronic Arts is an exemplar of this new style: traditional game information such as health and ammunition have been woven into character design, allowing for an unobstructed view.

However, significant to this paper is that fact that wearable eye displays have not been embraced in the mainstream as a legitimate computer platform in the league of the smartphone or the laptop.

Relevance to HCI Community

Google is calling for a profound change in computer interactivity with the mainstream introduction of the wearable eye display. This case study explores how this nascent computer platform is undergoing a process of early adoption in creative and alternative ways. Our paper charts this phenomenon by reading the popular culture context that surrounds adoption and the discursive response in the news and media.

The path to technology adoption is a much-researched area with established theories as to why people embrace a platform. John B. Horrigan and Ellen Satterwhite analyze adoption and emphasize the social aspect:

[It is] social support that draws people to adoption, that is, the "demonstration effect" that comes when people see others in their social networks using something new, which in turns helps people understand the value of trying something new. . . . People learn about a new product from people around them; their social networks, in other words, play a key role in helping people discover the utility and usability of an innovation. [8]

Google's approach is to bring Glass into public social networks before it emerges. It generates a culture and a mass mainstream following for Glass as a new HCI platform by mediating how it is introduced to the public. Using an exemplary figure in Sergey Brin, Google makes Glass seem both socially relevant as well as alluring. While relevant research has been conducted on the adoption of "hyped technologies," [9], it usually takes a consumer research perspective and does not

consider the broader discourses, personas, and popular culture allusions that function in this process.

Moreover, HCI practitioners are encouraged to embrace much more complex models of users as *se/ves* with rich life experiences. Hedonic factors are becoming more important considerations for design [10]. Karapanos, Zimmerman, Forlizzi, and Martens, make this point:

CHI [Computer Human Interaction] has been naturally focusing on early interactions. As a consequence we have been mostly concerned about the product qualities that dominate in early use. We argue that the focus of CHI practice should expand from the study of early interactions to the study of prolonged experiences, understanding how a product becomes meaningful in a person's life. [11]

While these authors promote a more prolonged, "temporal" analysis of how users value and identify with a new platform in the process of adoption (in their case, the iPhone), our research calls for understanding the process adoption even before a user has made a purchase or even seen the device. It calls for analyzing the culture that precedes adoption.

Enthusiast responses and external press also contribute to the popularization of technological innovation. Our case study was initiated, in part, by a social media event that presupposed the announcement of Google Glass. On October 25, 2011, Business Insider published an article called "Googlers Are Passing Around A Crazy Rumor About Sergey Brin Working On Architecture" that opened with a provocative claim:

'Sergey Brin is Batman.' That's the meme flying around the Google office, several sources within the company have told us. While Brin has a number of pet projects, the most interesting one is a potential project involving architecture. [4]

This article frames Brin as Batman and it paves the way for much press on the Google X Lab, the real-life secret lab that is touted to be developing a space elevator, a self-driving car, and the now imminent Google Glass (see figure 2). In subsequent articles by the same writer, there is mention of a rumour that Brin is creating an architectural blueprint for a "batcave." Our goal is to understand how and to what end the popularization of certain ideas precede technological innovation and essentially ease adoption.



Figure 2 Sergey Brin wearing Google Glass

Methodology

This paper materializes from a team-based, ongoing humanities project on the rhetoric of wearable computers and augmented reality devices as they impact digital life and culture. It works in conjunction with previous work on Glass's social media campaign

[12]. It also follows previous research on the popular culture effect of the Iron Man phenomenon on technical innovation and augmented reality [13].

For this paper, the study draws on the discourse analysis of a corpus of 1,000 mainstream print news articles, as well as online media pieces spanning February 2012 to November 2012 that focus on Google's "Project Glass" and charts the YouTube social media campaign. So-called rumors that surround early predictions for future Google products also undergo textual analysis. The study also delves into a close reading of the Batman myth, which provides prior context for the emergence of Glass.

This paper speculates in three veins toward the argument that Google Glass operates through a culture that is currently provoking a paradigm shift toward wearable components in the eye display:

1. Fascination with the Batman myth
2. Fascination with the Batcave
3. Popularization in traditional and social media

1. Fascination with the Batman myth

Created by comic artist Bob Kane and writer Bill Finger, Batman first appeared in Detective Comics #27 in May of 1939. In the 70 years since, Batman has achieved iconic status in comic books, film, television, animation and video games.

Batman's tale of billionaire playboy Bruce Wayne who fights crime from the shadows by night runs counter to almost all other superhero archetypes, aside from Tony Stark's Iron Man. Whereas almost all other superheroes have been bestowed with superpowers from cosmic

radiation, genetic mutation or laboratory accidents, Bruce Wayne is an everyman who defeats his foes with guile, fear, and technological genius. Batman's moral code prohibits him from killing his enemies, and this restriction on his behavior has led to the creation of many devices to subdue, defeat and restrain opponents in non-lethal fashion.



Figure 3: Batman battling a shark with Bat-Shark Repellent (*Batman*, 1966).

While British agent James Bond also featured many of his own gadgets that have now come to fruition (cameras the size of credit cards, radio receivers that slip in one's ear canal), 007 was always given his technology from the character Q, the implied result of tens of millions of dollars of research and development provided by the British government. Like Spider-Man's alternate ego Peter Parker who invented his wearable webshooters in the bedroom of his uncle's house, Batman's wearable technology was created out of one man's necessity (see Figure 3). It is this archetype of the lone scientist working in domestic isolation for the common good that fueled much of today's modern

"Google X shows dogged determination for far-out research"

CNET.com

"'Google X' is where the search giant's scientists work on wild, out-there ideas."

The Daily Telegraph (Australia)

"The 'Google X' laboratory in California is responsible for the idea of refrigerators that order food themselves, plates that post details of the content of your meal to a social network, self-driving cars and space elevators — and today they added another futuristic product to their list: wraparound shades that you can use to browse the internet."

The Independent, (UK)

technology: one only has to look at the early years of Steve Jobs, Bill Gates, and Sergey Brin to see the real-life equivalent of a genius who ignores social convention in dogged pursuit of a vision.

Just as classic tales like *Romeo & Juliet* and *Oedipus* are continually reinterpreted for a modern audience, so too has Batman — and his technology — been reinvented.

The campy 1960s television version of Batman that starred Adam West played fast and loose with Batman's wearable technology, as almost every gadget that Batman used was prefixed by the word "Bat," a convention which was even integrated into the show's advertising ("Same Bat-Time, Same Bat-Channel"). Though his technology began to border on the ridiculous ("Bat-Rope," "Bat-Drinking Water Dispenser" and even "Bat-Shark Repellent") the early series paved the way for the high tech gadgets found in Christopher Nolan's *Dark Knight* trilogy.

2. Fascination with the Batcave

As the mythology of Batman evolved past ink strokes on comic paper, so too did Batman's means of procuring his technology. While Tony Stark of Iron Man is internationally famous for being a genius inventor, Bruce Wayne's is seen more as a savvy investor and playboy than having any great technological prowess. The invention of the microchip in 1959 ultimately destined Batman's gear to become increasingly computerized, and his mythology evolved to suit the then modern era. Rather than add computer programming and hardware development to Batman's long list of skills, the comics saw the introduction of a character named Lucius Fox. Played by Morgan

Freeman in the Christopher Nolan trilogy, Fox works as the research head of Wayne Enterprises' Applied Science Division and supplies Batman with much of his portable technology (see Figures 4 and 5). This evolution of the Batman mythos runs the Caped Crusader parallel to James Bond in that both figures have access to cutting edge technology developed not in isolation, but by teams of highly skilled professionals working with near limitless financial and technological resources — much like the modern day equivalent of Google.



Figure 4. High-tech wizardry in the original Batcave (*Batman*, 1966).



Figure 5: Character Lucius Fox in the Applied Sciences Division of Wayne Enterprises (*The Dark Knight*, 2008).

While the original Batman was able to toil away in the solitude of the Batcave to serve the greater good, the evolved Batman makes use of a team, which remains unaware of its technology's ultimate usage.

This development reflects technological sophistication of the times. Modern science fiction must intrigue readers with its portrayal of what might be, and the development of the smartphone made much of Batman and James Bond's once-futuristic technology obsolete. A child who has grown up with an iPad would not be impressed with Batman's older technology, and so both Batman's mythology and his tech must evolve to stay relevant for his audience.

While it's difficult to see the practical commercial application of a portable shark repellent, the eventual transformation from low-tech camp to a high tech display that lets Batman see otherwise invisible objects through visual depictions of sonar waves in *The Dark Knight* has almost limitless applications, be they military, medical, or civilian. One wonders what future stories will be told by the writers of Batman as modern consumers gain access to further technologies.

The Batcave can also be construed as a metaphor for the allure generated by "Google X," which appears in the corpus of our study 273 times under several descriptors, such as "laboratory," "team," "project," "research group," and set of "engineers." The word "secret" occurs 206 times, emphasizing Google X's positioning as a mysterious location where innovation occurs. The corpus exudes confidence surrounding Google X. Most significant of all, the word "future"

occurs 735 times suggesting that Google is creating the future that we will all ultimately fulfill.

3. Popularization in traditional and social media

Sergey Brin has been loosely associated with Batman since the fall of 2011, setting persuasive discursive grounds for actions that Google takes. A compelling character in the narrative that charts this technology's emergence, the name "Sergey Brin" appears 713 times in the corpus of 1,000 print and online news articles about Google Glass. Often the story concentrates on Brin's activities, comments, whereabouts, and future expectations amid news of a technology that only exists as an artifact of the press for the public. Rupert Till explains the definition of how an individual must amass popular fame in order to form a "cult of personality":

A celebrity is someone who is well known for being famous, and whose name alone is recognizable, associated with their image, and is capable of generating money. . . For a star to progress to a point where they are described as a popular icon requires their achievement of a level of fame at which they are treated with the sort of respect traditionally reserved for religious figures. In order to be described as a popular icon, a star has to become a religious figure, to develop their own personality cult and recruit followers. [14]

While it would be a stretch to call Brin a pop cult icon, the point is that Google Glass and the constructed *character* of Sergey Brin co-create each other, generating the kind of popularity often reserved celebrities like Bill Gates, the late Steve Jobs, and

Mark Zuckerberg. However, no computer platform has been popularized and sensationalized at such an early stage and in such a unique way. The field of HCI charts new ground.

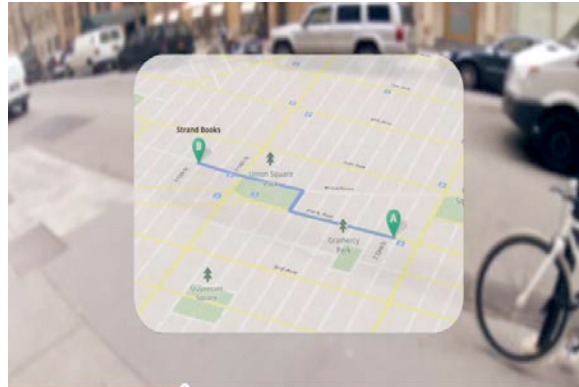


Figure 5. Screenshot from One Day... YouTube video

Enticing too, are the YouTube concept videos introducing the public to Google Glass and the fascinating potential for this new computer platform. Most salient are "Project Glass: One Day" (April 4 2012: 18,762,646 views) "Project Glass: Trampoline Video" (May 24, 2012: 716,460 views) and "Project Glass: Live Demo At Google I/O" (June 27, 2012: 1,092,418 views). Functioning to normalize what this platform is for, the tasks it can fulfill and the potentials it reveals, these videos also narrate a utopian future where anything is possible. The character of "Project Glass: One Day" lives a mediated life whereby no task such as building his calendar, navigating a bookstore, or meeting friends suffers any interruption or hardship (see figure 5). Reminiscent of both the augmented life of *Star Trek: The Next Generation* and the saccharin

sweet utopia of the film *Pleasantville*, "One Day..." promotes a perfect world and perfected digital lifestyle that is hard to resist.

Discussion

Much recent HCI-related research has focused on broadening the field of user-centered design and user experience into adjacent disciplines. Our case study crosses many disciplinary boundaries including hardware design, computer adoption, user experience, brand identification, marketing and advertising, social media and popular culture, to name a few. We explore how potential (future) users are persuaded to adopt a new platform by looking at multiple avenues of adoption or persuasive tactics. Considering that it cannot be purchased, demoed or touched by everyday people, Glass's significance is unique and extends beyond being a successful marketing campaign. It is establishing a working notion for what an augmented reality eye display should do for everyday people.

For the past decade, the CHI community has also maintained an ongoing conversation concerning innovation in the field. Saul Greenberg and Bill Buxton argue that usability testing at the early stages of design may "quash what could have been a promising design idea" [15]. They go on to discuss how usability has led to a "dilemma" and they ask "how can we create what could become culturally significant systems if we demand that the system be validated before a culture is formed around it?" [15]. Our case explores how systems become validated by cultural, social, and commercial processes at the early stages.

Conclusion

Michael Cusumano argues “that companies in the information technology business are often most successful when their products become industrywide platforms” [16]. Google is clearly trying to fulfill this goal for Glass using traditional news channels, social media, and by responding to an enthusiast following very much interested in mythic heroes such as Batman, Iron Man, and so many others. Google Glass may or may not be a successful product; however, the fact remains that as a phenomenon it has had an incredible impact on the eye display as a device, a platform, and the cultural milieu that surrounds and contextualizes it.

This paper has argued that the wearable eye display as a platform undergoes early stages of mainstream adoption amid mythic discourses like Batman and his Batcave. It also acknowledges traditional new discourses and the ebb and flow of social media in this process of adoption.

There are many avenues for deeper exploration of Google Glass and its popularization. Comparison with historical Apple products and early campaigns such as the famous Macintosh 1984 Superbowl TV advertisement could broaden the research in terms of how marketing drives platform adoption. Closer text readings of the *Batman* comics and films over time could lead to a richer argument concerning the normalization of technology in popular culture to contextualize claims within the paper. Finally, a comparison between the Iron Man and Batman mythos would yield interesting analysis concerning fandom and real technical innovation. Tony Stark’s Iron Man outclasses Batman on almost every possible level: it is a fully realized exoskeleton featuring a voice-activated

artificial intelligence named Jarvis, is capable of sub-orbital flight, and yet is small enough to fit into a briefcase. However, more significantly, it is fan-based and mainstream enthusiasm for heroes and their technologies that is the object of interest to this kind of research.

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