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GOOGLE GLASS: A WEARABLE TECHNOLOGY FOR SUSTAINABLE MODERN LIBRARIES

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Abstract:-Libraries are functioning in the highly technological spaces today. From books to microfilm readers to computers – a library that is free of technology is not seen today. The technologies that one finds in a library are a reflection of a variety of intersecting needs of the users as well as library staff, and goal is ensuring access to informational resources to the right user at a right time in a right format. E-books represent a rather ideal technology for these purposes as they are relatively inexpensive, easy to use, and it is simple to pass a book along from one person to another. The format has taken a giant leap in satisfying the fourth law of library science enunciated by Dr. S R Ranganathan. In the same lines the libraries are adapting various innovative technologies in access as well. One such a technology is wearable computing (ex. Smart watches, smart Glasses), which are designed to be small and lightweight with faster processing capability. These technologies enable even more immediate ways to share and access information. This article talks about such advanced wearable technology tool is Google Glass. Its features are taking photographs, sending messages, getting directions, making calls, searching information in Google and for special parsons (physically challenged persons) it has voice recognition, capture zooming features by swiping. This paper relieves that, how librarians and libraries can adopt this modern technology into library services.

Keywords: Google glass, Smart glasses, Wearable technologies, Information access, Modern Libraries.

1.0 Introduction

As more information gets available online, libraries have moved space to make room for computers and recognize that the notion of access to a computer represents access to information. For Libraries, technologies have an enormous deal of utility, especially technologies that promote access without compromising the commitment that libraries have towards adding value and seamless access to information by not compromising the privacy. In this direction, use of wearable technologies has been encouraged and is growing dramatically over the last few years. On the other hand, it can easily integrate tools, devices, power needs, and connectivity for a user. Much of work has been done and get published on the one such wearable technology called Google Glass. The Google glass features attracted many sectors such as medical, engineering, teaching, journalism, media and so on.

2.0 Wearable Technologies

The first wearable computer was created by Edward Thorpe and Claude Shannon in 1961. In the end of 1990s, Steve Mann created the 'Eye Tap Digital Eye Glass' that was one of the first attempts to make a head-mounted display computer (Mann, 2012). In 2013, Google started to sell a prototype of 'Google Glass', a new type of wearable technology with an optical head-mounted display (Thorp, 1998).
Tehrani and Michael stated, Wearable Technology or Wearable Devices, wearable refers to computers that have been integrated into clothing and accessories and can be easily worn due to their sensory and scanning capabilities. Wearables often have functionalities not available in smart phones or tablets. While these technologies show great influence in fashion and entertainment, they have the largest impact in the areas of health, medicine, and fitness. Librarians are also not lagging behind in using such tools and technologies, but are exploring wearable technology's potential for enhancing services and access to the resources. Examples of wearable devices include watches, glasses, contact lenses, e-textiles / smart fabrics, headbands, beanies and caps, jewelry such as rings, bracelets, and hearing aid-like devices that are designed to look like earrings (Tehrani and Michael, 2014).

3.0 Google Glass and its Impact on Sustainable Modern Libraries.

Google Glass is a fascinating innovation and has more potential to be used in the library than any new device category we have seen in recent years. Google Glass is a wearable computer with an optical head-mounted display that is being developed by Google. Google Glass displays information in a smart phone-like hands-free format that can interact with the Internet**.** Google offers a companion Android and iOS app called MyGlass, which allows the user to configure and manage the device seamlessly (Wikipedia, 2016).

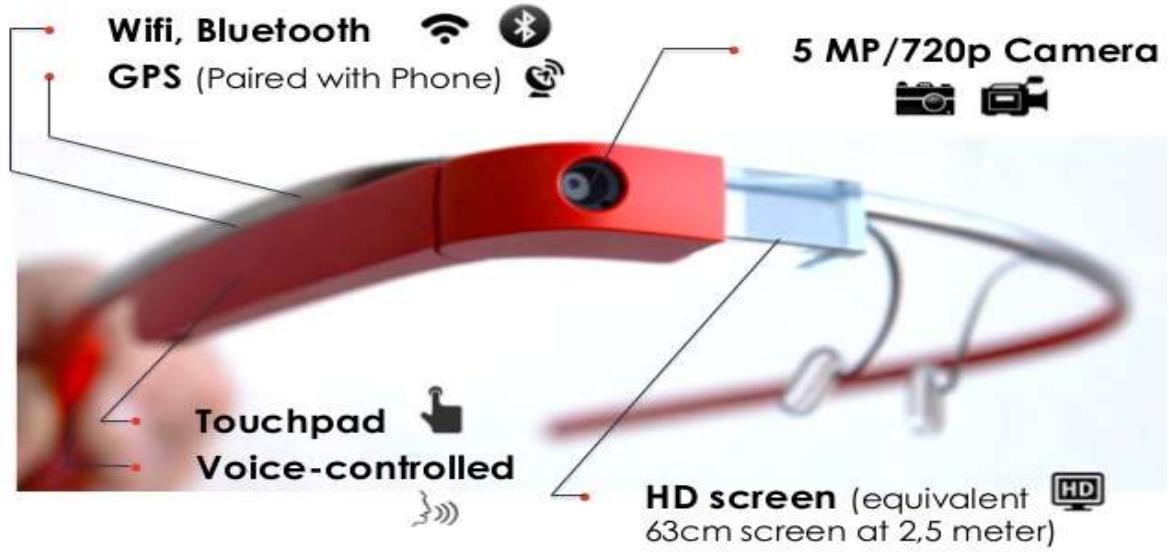

Figure (1): Google Glass with their features

[Source: http://www.slideshare.net/itworks/google-glass-meetup-presentation-by-augnition-description-comparison-and-use-cases]

Google glass has a tiny digital 'screen' projected onto a prism located slightly above the right eye, and a touch-pad built into the frame. Through a combination of touch, kinetic, and voice commands and a timeline-like visual interface, Glass allows users to explore the Internet, capture media, check and send emails, and make video calls (Claremont college's library, 2015)**.** It relies heavily on a data connection, and can access the cloud via Wi-Fi or through a Smartphone's data plan (Bluetooth or mobile hotspot).More complex functionality is obtainable by installing "Glassware," additional applications that serve specific functions much like apps on a smartphone (Metz, 2014). Like virtually any emerging technology, Glass provides interesting potential use cases for libraries and higher education.

The Google glass has extended its features to medical field like operating rooms, ambulances, a trauma helicopter, general practice, and home care as well as the use of public transportation for visually or physically impaired.

4.0 Technical Specifications of Google Glass

Android 4.4
640×360 Himax HX7309 LCoS display
5-megapixel camera, capable of 720p video recording
Wi-Fi 802.11b/g
Bluetooth
16 GB storage (12 GB available)
Texas Instruments OMAP 4430 SoC 1.2Ghz Dual(ARMv7)

1 GB RAM (Wikipedia, 2016).

5.0 Functions of Google Glass

1. Google Glass does the following when it's on and connected to the Internet.
2. The Glass camera sees the world through your eyes and captures photos and videos at your will, and sends them to one or more of your contacts of choice.

3. Sends email and text messages to your contacts and vice-versa.
4. Allows you to chat live via video with one or more Google+ friends.
5. Makes and receives phone calls.
6. Searches the web with the Google search engine so that you can find information easily.
7. Translates text from one language to another and also speaks the translated text and also shows a phonetic spelling of the translated word(s) on its screen.
8. Provides turn-by-turn navigation with maps as you drive, ride, or walk to your destination.
9. Shows current information that's important to you, including the time, the weather, and your appointments for the day.
10. Recognizes the song that's playing on the device and identifies the artist(s) singing the song and so on (Butow and Stepisnik, 2014).

6.0 Role of Google Glass in the Modern Libraries

Today libraries are and remain the important educational sites by providing physical and digital access to information. But the rapid development of information communication technologies (ICT) reshapes these very modes as well as a means of modern day communication process, in fact, scholarly communication to be precise. Many university libraries invest in new technologies and try to improve digital access to learning materials. The use of wearable devices can help library staff to attract a new generation of readers. A Google representative suggested that Glass could make it easier for library users to find materials by mapping the collection using GPS (Signorelli, 2014).

MyGlass app, Records debates from the first- person perspective to examine speech techniques Claremont University Library (Thomas, 2014).

Scan and Deliver app, Allows library staff to fulfill patron scanning requests directly from the library stacks Yale University Library (Patrick, 2014).

ShelvAR app Identifies shelf reading and inventory management Miami University Library (Hawkins, 2014). In other hand it had function different situation in university libraries. Evidently, there are many students and professors that visit university libraries every day and spend many hours of searching information in these spaces.

Librarians can provide the services to the users by swiping their mounted glass without touching computer, by offering issue return services, can answer queries related library services and Librarians and Library staff can observe users by sitting on their desk.

For users, they can use the OPAC in a Library, can get CAS services, Event alerts, can access the database, can take a picture of the content, they can get the direction of the different section in large libraries using Wi-Fi, they can get reminders from the library, and so on.

7.0 Special Functions of Google Glass

7.1 Optical Character Recognition (OCR) with Google Glass: While reading a book, a business flyer or a menu with Google Glass text is immediately scanned and converted into digital text, that can be translated to another language with Google Translate, stored by Google Keep, copied into a document that you are working on, shared with friends via Google+ or Social media and sent as the message or as an attachment (Imagine life with Google glass, 2013).

Figure (2): Optical Character Recognition (OCR) with Google Glass

[Source: http://imagine-life-with-google-glass.blogspot.in/2013/06/optical-character-recognition-ocr-with.html]

7.2 Online Guide to Desired Books with Google Glass: One can imagine that they can be navigated to the desired books when entering a library or a bookstore based on genres, authors and year of publication. User can even watch a book review or interview with the author with Google Glass via YouTube. User can discover the different location in the story with Google Street View and Google+ Photos (Imagine life with Google glass, 2013).

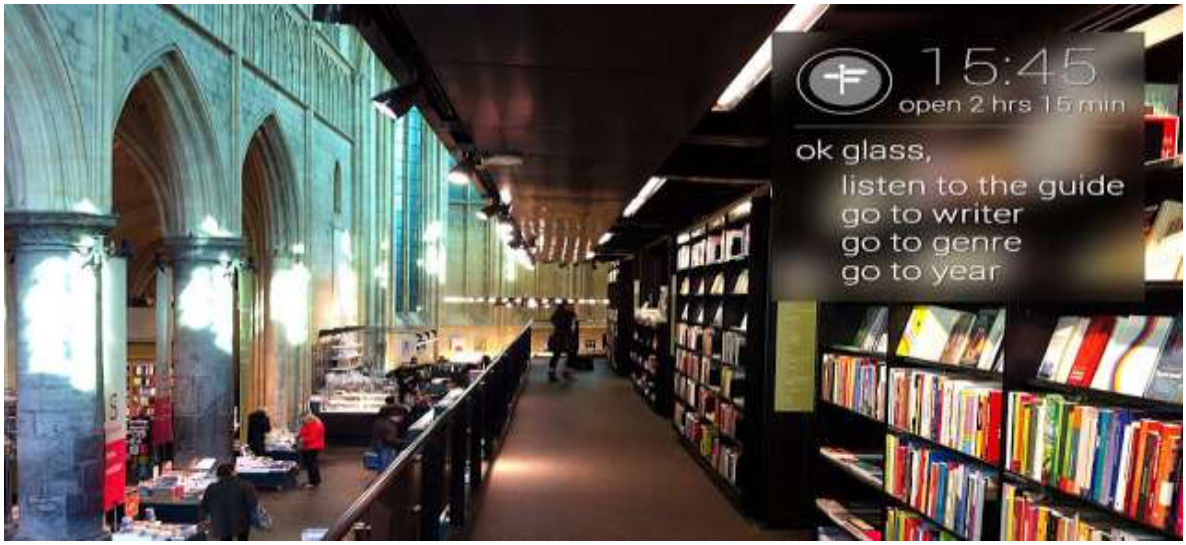

Figure (3): Online guide to desired books with Google Glass

[Source: http://imagine-life-with-google-glass.blogspot.in/2013/06/online-guide-to-desired-books-with.html]

7.3 Librarians with Google Glass

Many libraries, including academic libraries, began experimenting with Google Glass as part of the Explorer Program. In this program, the Libraries purchased Google Glass to circulate among their user community, such as students, faculty, and staff with the goal of providing the access to an expensive and ‘‘relatively rare technology,’’ and to stimulate discussion about the issues inherent in wearable technologies. Google Glass is available for five-day loan periods (Booth and Brecher, 2014). ***Yale University,*** exploring Glass use in enhancing classroom instruction and the research process. The Library’s Resource Sharing and Reserves group have been working with access services and library information technology (IT) staff to develop library specific uses and applications for this technology (Wright & Keith, 2014). ***Central New York Library,*** René Battelle is one of the few librarians who are using Google Glass. She has been using the device for quick research and to help library visitors with small tasks. Google Glass has also been used to take notes and has been used during demonstrations (Glassappsource, 2016).

8.0 Limitations

It can be easily broken and damaged. The user will have a tough time taking care of it.
Can be used in metropolitan cities.
Privacy Concerns
Design & Price

9.0 Conclusion

Google glass has opened a world of options and opportunities for library users, library service providers, library staff and the administrators as well. The Google glass has not been explored fully to its potential in the library environment as compared to other fields. However, the indications are already seen on the impact of this device has made many of the library managers to look for adopting this technology for their overall activities of the

library and access management. There is no effort has been made in India on the use of such a device and the impact has yet to be known. The onus lies on the shoulders of the modern day library and information professionals to use such a path breaking technology in providing the right information to the right user at a right time in a right format in a right place or user's place of choice. Way-to-go….

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