

## **LibGram Assist: An Innovative Librarianship for the Future**

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### **ABSTRACT**

*LibGram Assist is a prototype of an arithmetical hologram projection of a librarian in a library environment. Using the latest technology of fairy light, LibGram Assist aim to support the new digital library environment hence, forever change the perception of the society about library, information sharing and information archive. It uses fairy light technology that applies femtosecond lasers to ionize air molecules and thus create crackling, photon-emitting pockets of plasma. These lights, or “voxels,” can be arranged in mid-air to create interactive and floating images. Users can touch; feel and control them. LibGram Assist are visualize as a 3D librarian hologram that appear to float in mid-air. LibGram Asst proposed to support a library to manage librarian routines communication tasks in providing library and references services to students and users. The LibGram Assist can be use by students and users (including handicapped users) to inquire and also to obtain information about the library and its resources by providing them the direction to find library material and resources. But most importantly, LibGram support both, 4IR and Malaysia TVET vision. LibGram Asist is a preliminary study done using a quantitative survey on twenty random sampling respondents during the International Innovation & Design in Library & Information Science Competition (InDeLib) 2018. Hence, this paper, discusses the acceptance of users (students and professionals) to the notion of interactive and innovative communication and information sharing using alternative form of artificial intelligence.*

**Keywords:** Library. Librarian. Hologram. Information sharing. Communication sharing

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## 1 INTRODUCTION

The current world 4<sup>th</sup> Industrial Revolution - 4IR (Nicolas Davies, 2016) describes the advent of “cyber-physical systems” involving entirely new capabilities for people and machines. It represents entirely new ways in which technology becomes embedded within societies and even our human bodies. Meanwhile, in Malaysia, Vocational Education and Training -TVET is currently forecast as Malaysian 4IR enabler that facilitate all support technology trends such as the Internet, artificial intelligence and virtual reality as key skills especially in building work for the younger generation. LibGram is coherent with both 4IR and TVET vision.

LibGram Assist is a new interactive holographic controls library assistance service to be introduced to library industry. It has the capability to store a massive amount of data and also the competency to share those amounts of data with wide world library users. According to Andrew Pepper (2017), unlike CDs and DVDs, which store their data on the disc’s surface, holograms store data in three dimensions and those pages can overlap in the storage space. A holographic memory device that can hold up to several gigabytes could compete with flash memory for several usages (Ahmed Elmorshidy, 2010). Hence, holographic storage could one day be the storage solution of choice. Plus this support an ideal picture of a forthcoming version of a digital library. It represents the new wave in the future of technology and communications. But most importantly, LibGram Assist offers an amazing new experience and new adventure to library users around the world.

LibGram Assist is coherent with current Malaysian Government notable technological, industrial and strategic national initiatives – TVET and also international 4IR revolution. LibGram assist articulate the utilizing foresight and futures prospecting to help drive the advancement of high technology competency and capacity in Malaysia digital library work. Hence, within commercialization platform LibGram Assist potentially become a one short library industrial technological investment effort but for a longer period of tangible profit. Plus, it can contribute as a platform allowing library industry to re-invent and re-branding itself into new library artificial intelligent technological phenomena that will benefit itself in both short and long run. An assistance tools in human effort to save human resource capital

### 1.1 LibGram Technology

LibGram Assist applies the ‘fairy lights’ system introduces by Prof. Dr Yoichi Ochiai in 2015. In accordance to his research paper, entitled "Fairy Lights in Femtoseconds: Aerial and Volumetric Graphics Rendered by Focused Femtosecond Laser Combined with Computational Holographic Fields"; ‘fairy lights’ systems produces fires that are very fast for every second, and these pulses are responsive to human touch. Effectively, just by swiping your hand, for instance, across a hologram’s pixels you can manipulate and control it.

*‘You can’t actually feel the videos or pictures, and although you can project a video, you can’t interact with it by touching it. So if we can project an image in a 3D form, and if you can touch it, then you can make something where you’ll think that there actually is something there’. Associate Prof. Dr Yoichi Ochiai, Tsukuba University, Reuters. November 2015.*

This 'fairy lights' systems have make it possible for us to create a computer keyboard made of light beamed onto a person's lap or allow video chat users to experience the virtual touch of the person with whom they are communicating.

## **2 PROJECT OBJECTIVES AND METHOD**

Primarily, LibGram Assist goal is to present a new form of attractive and innovative library user communication and learning service that aligned to the development of modern digital library platform, by incorporating a tangible 3D hologram as the first interactive displays of a library assistant in library industry. Hence, with the aim to evaluate the acceptance of a hologram librarian idea and the value of this prototype project, a preliminary survey using random sampling to select 20 respondents during the International Innovation & Design in Library & Information Science Competition (InDeLib) 2018, in Universiti Teknologi MARA Kedah was organized. The random survey uses a set of printed questionnaires with a choice of answers devised for the purposes of a survey study.

In the survey, respondents were request to respond to a list of questions below:

*Question 1:*

LibGram Assist offers an innovative technology trends that incorporate an artificial intelligent, and virtual reality tools towards building younger generation communication technology platform.

*Question 2:*

LibGram Assist supports National Key Economic Area (NKEA) by increasing the quality and marketability of 4IR participants through the future digital industry and information technology platform.

*Question 3:*

LibGram Assist presents an extension of an ongoing digital revolution experience to Malaysian Library Industry and society.

*Question 4:*

LibGram Assist is a form of library industrial technological investment effort

*Question 5:*

LibGram Assist allows library industry practitioner to re-invent and re-branding itself into new library artificial intelligent technological phenomena that will benefit itself in both short and long run.

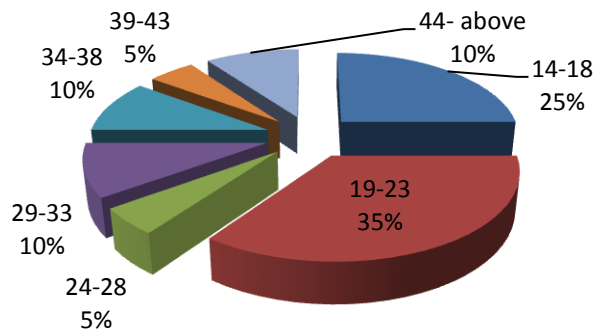
*Question 6:*

LibGram Assist is an assistance tools in human effort to save human resource capital

## **3 RESULTS AND DISCUSSION**

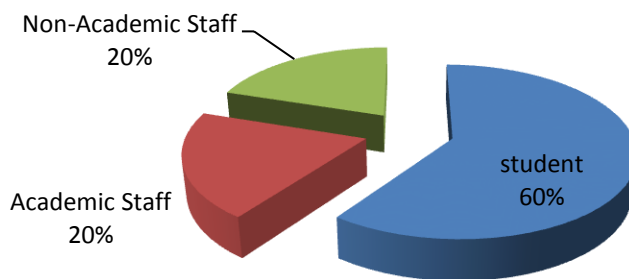
Below are the finding and the discussion of the survey done to evaluate the acceptance of a hologram librarian idea and the value of this prototype project.

In relation to technological engagement and practices, it is proven that youth and young adults all over the world are the most active users of Information Communication and Technology applications (ITU, 2013). Hence ICT has played a central role in young people's rise to prominence on a global scale. It has helped them to mobilize and collaborate, and it has given them a voice where before they had none. (ITU, 2013). As such, this survey found that 60% of the total respondent are youth aged from 14-18 (25%) and 19-23 years old (35%) (see figure 1). This finding supports the understanding that youth are likely to accept an innovative librarianship approach towards communication and learning service that aligned to the development of modern digital library platform.



**Fig 1.** Respondent Age

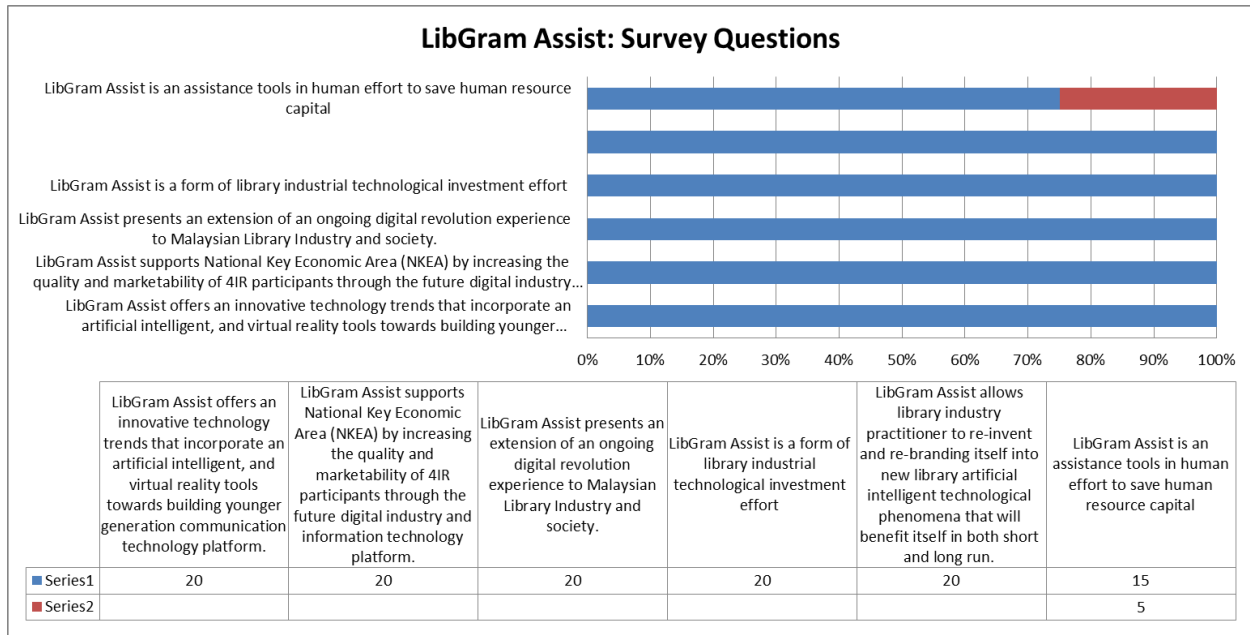
In relation to the respondent age, survey found that 60% of the total respondents (see Fig. 2) who are receptive towards the LibGram Assist as an alternative for innovative librarianship approach towards communication and learning service are students. Meanwhile, 20% respondent comes from the academic industry namely teachers and lecturers and 20% respondents from the non-academic- library Sciences practitioner.



**Fig 2.** Respondent's Occupation

Figure 3 shows that upon answering question one to question five, all 20 respondents (100%) agreed that LibGram is a form of innovation that supports national future digital

industry, and that it will allow an extension of an ongoing digital revolution in Malaysian library and information industry. In contrarily, five respondents (25%) did not agree with Question 6 that LibGram Assist is an assistance tools in human effort to save human resource capital. Nonetheless the balance of 15 respondents (75%) do agreed that LibGram Assist is a new technological tool that will change national human resource capital practise and usage.



**Fig 3. LibGram Assist Respondent Survey**

#### 4 CONCLUSION

LibGram assist is coherent with current Malaysian Government notable technological, industrial and strategic national initiatives – TVET and also international 4IR revolution. LibGram Assist articulates the utilizing foresight and futures prospecting to help drive the advancement of high technology competency and capacity in Malaysia digital library work. Hence, within commercialization platform LibGram Assist will potentially become a one short library industrial technological investment effort but for a longer period of tangible profit. It offers a platform that allow library industry to re-invent and re-branding itself into new library artificial intelligent technological phenomena that will benefit itself in both short and long run. Most importantly it offers an assistance tools in human effort to save human resource capital. LibGram Assist offers technology trends that incorporate an artificial intelligent, and virtual reality tools towards building younger generation communication technology platform. It supports the National Key Economic Area (NKEA) vision by increasing the quality and marketability of 4IR participants through the digital industry and information technology platform by the year 2020. In Addition, LibGram Assist presents an extension of an ongoing digital revolution experience to Malaysian society

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## REFERENCES

- ITU. 2013. *International Telecommunication Union: Measuring Information Society*. Geneva Switzerland [https://www.itu.int/en/ITU-D/Statistics/Documents/publications/mis2013/MIS2013\\_without\\_Annex\\_4.pdf](https://www.itu.int/en/ITU-D/Statistics/Documents/publications/mis2013/MIS2013_without_Annex_4.pdf)
- Andrew Pepper (2017). *Five surprising ways holograms are revolutionising the world*. <http://theconversation.com/five-surprising-ways-holograms-are-revolutionising-the-world-77886>
- Ahmed Elmorshidy (2010). *Holographic Projection Technology: The World is Changing*. *Journal of Telecommunications*, Volume 2, Issue 2, May 2010 <https://arxiv.org/ftp/arxiv/papers/1006/1006.0846.pdf>
- Zanariah Hj Ahmad (2016) *Technical and Vocational Education & Training (TVET)*. <https://www.moe.gov.my/images/Terbital/Rujukan-Akademik/Presentation-Education-2030-Launch-Symposium-23rd-August-2016-Hotel-Istana-Ballroom-Kuala-Lumpur/Zanariah-Hj-Ahmad/Zanariah%20Hj.%20Ahmad.pdf>
- Irving Wladawsky-Berger (2017). *The Fourth Industrial Revolution - Risks and Benefits*. <http://www.archive.annenberglab.com/blogs/iberger/2017/02/fourth-industrial-revolution-risks-and-benefits>
- Katrina Pascual (2015). *Japanese Scientists Create Holograms You Can Touch*. <https://www.techtimes.com/articles/112211/20151201/japanese-scientists-create-holograms-you-can-touch.htm> tECH tIMES 1 dECEMBER 2015