DISRUPTION: MOBILE DIGITAL LIBRARY IN INDONESIA

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Abstract

In the disruptive era of the industrial revolution 4.0 as it is today, there are almost no difficulties in fulfilling information. Good information that is educational or information that is entertainment. Information also takes various forms, both in the form of writing to information in the form of videos that we can easily get. In this era of information dissemination, there are many things in life that must change in order to continue to exist and not be eroded by the times. Self-adjustment and capacity building need to be done so as not to be left behind and always be efficient. One of the professions that is engaged in the information sector and really needs to adapt to the conditions of this era of disruption is the librarian.

Technological disruption is defined by Millar, Lockett, Ladd (2017) in Mardiana (2018) as technology that can potentially create innovation disruptions in products, services or business processes at every level, such as industrial structure, industry segmentation and social systems (changes in social relations).

The presentation of this study was carried out in a descriptive narrative and qualitative in-depth in explaining the discussion of the study. Narrative-descriptive and qualitative styles try to construct reality, and understand the meaning that interprets its meaning so that it is necessary to pay attention to processes, events and authenticity (Somantri, 2005).

Disruption and development of information technology today has affected libraries. This development can be seen from how technological disruption has made many applications, not only e-commerce, but also mobile libraries eventually emerge. In Indonesia, the application of mobile libraries is quite common, both in public libraries and university libraries.

Keywords : Disruption, Digital Library, M-Library

1   INTRODUCTION

In the era of digitalization as it is today, the development or dissemination of information is growing fast and rapidly.The development of digitalization has an impact on access to information that is so easy and fast. We can access this information through the devices we have. The information we need can be accessed from anywhere and anytime. Of course, with internet access that is connected via the smartphone that we have. Ease of access to information in this digital era, brings many social changes in life.

Along with the development of information technology, a globalization is created which is characterized by an explosion of information. The development of this information was preceded

by the development of supporting tools or what we know as "Gadgets". There are many tools that we can use and access through a network that makes the information spread so much and we receive it quickly. Ease of accessing information without being limited by distance, space, and time is one of the mainstays in today's era. Too easy and the amount of information circulating makes us have to be able to select, sort, and manage information that can really be accounted for and information that is only passing wind or temporary reading.

In the disruptive era of the industrial revolution 4.0 as it is today, there are almost no difficulties in fulfilling information. Good information that is educational or information that is entertainment. Information also takes various forms, both in the form of writing to information in the form of videos that we can easily get. In this era of information dissemination, there are many things in life that must change in order to continue to exist and not be eroded by the times. Self-adjustment and capacity building need to be done so as not to be left behind and always be efficient. One of the professions that is engaged in the information sector and really needs to adapt to the conditions of this era of disruption is the librarian.

Advances in science have resulted in increasingly sophisticated technology and brought about many changes. The development of information technology is growing rapidly day by day. This development has disrupted many aspects of human life, including the library. Ease of accessing and obtaining information is no longer limited by time and space. As a result, the library, which was once a source of information and knowledge, could be threatened with its existence if it does not make changes.

Whether we realize it or not, the phenomenon of disruption has brought extraordinary changes. These changes pose a number of increasingly complex challenges and new problems. Libraries are required to continue to strive in adopting digital technology to meet the information needs of users. If the library only survives with the conventional system, it is very likely that the library will be abandoned by users and this can affect the function of the library in the future.

The current challenge for libraries is how libraries can transform and make friends with technology so that users continue to take advantage of the services in the library. Today's people's lives are inseparable from mobile phones or smartphones, it can be seen that currently the number of mobile phone users is increasing from year to year. Based on a survey from Hootsuite and We Are Social, the total population of Indonesia currently reaches 274.9 million people. When there are 202.6 million internet users, it means that 73.7% of Indonesian citizens have been touched by surfing in cyberspace.
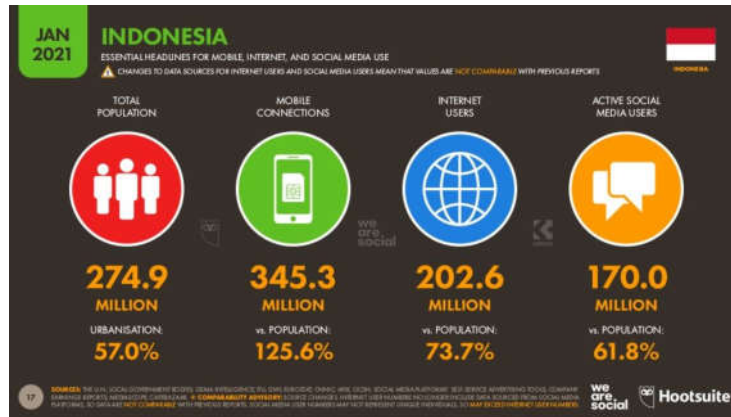
Figure 1: source https://andi.link/hootsuite-we-are-social-indonesian-digital-report-2021/

This makes Indonesia the fourth largest number of smartphone users in the world (Newzoo, 2020). We often encounter this phenomenon that someone can have more than one handphone depending on their needs. This phenomenon then gave rise to the idea of developing a library with a digital library approach. Mobile Library, also known as M-Library, is a platform that allows users to access all collections and services owned by the library with one click on their respective mobile phones. Based on this description, it is necessary to study more deeply about what Mobile Library actually is and how it is implemented in libraries.

2   METHODOLOGY

The presentation of this study was carried out in a descriptive narrative and qualitative in-depth in explaining the discussion of the study. Narrative-descriptive and qualitative styles try to construct reality, and understand the meaning that interprets its meaning so that it is necessary to pay attention to processes, events and authenticity (Somantri, 2005). The data analysis used in this study consists of data collection (collection/acquire data), data reduction/processing (process data), data analysis (analyze data) and data visualization (data visualization) supported by information technology personnel (information technology / IT personnel) and business personnel (business personnel) as shown in Figure 2 (Erl et al, 2015) below:
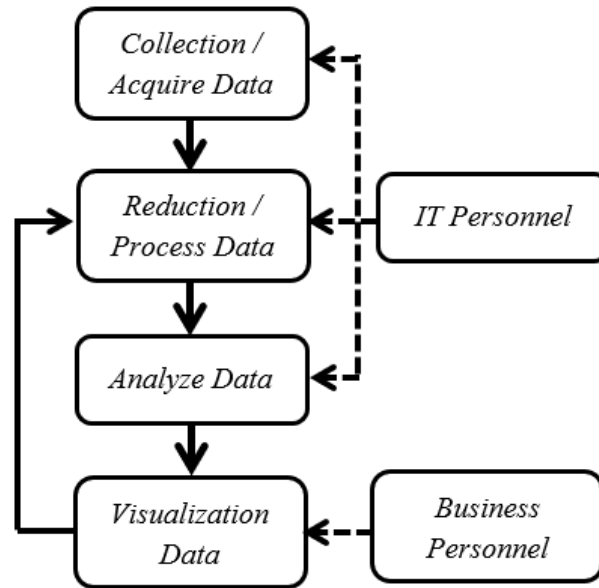
Figure 2 : Model Processing Flowchart

The method in writing is required as a preparation flow for searching, processing, and data analysis. Management principles are built from a valid data foundation and develop according to the concept pattern of model processing flow and data visualization (Figure 1.) Study of literature and other supporting references that are integrated as a basis descriptive and predictive data of scientific studies (Jennex, 2009; Wolfert et al, 2017).

3 FINDINGS AND DISCUSSION

3.1 Disruption

In language, disruption means disruption or chaos; disturbances or problems that interrupt an event, activity, or process (disturbance or problems which interrupt an event, activity, or process). The main reason for the disruption that can be seen from the changes that occur directly in the economic sector of the business, so that those who do not use this method will leave the ecosystem and as a result, business people who still use the old methods and systems will lose the competition.

The early history of the formation of the term industrial revolution 4.0 originated in Germany at the 2011 Hannover fair, the event included various robotic technologies, 3d printers, and other technologies. Industrial revolution definition 4.0 is very numerous and varied because many researchers use and develop the term industrial revolution 4.0. In essence, the term 4.0 is the speed of data access and the availability and ease of information integrated with the internet. The 4.0

industrial revolution as it is today or better known as the era of disruption is a challenge in itself, especially for the world of education, it is inseparable from distance higher education. In this era of disruption, a lot of technological sophistication will shift the existence of human resources (HR). Only human resources who master information technology and who are able to adapt to existing developments will be able to survive. In his book (Kasali, 2017: 34), states that disruption is the same as innovation which is directly proportional to the threat to the "incumbent". (Rogers, 2015) states that innovation is "an idea, practice, or object perceived as new by the individual." (an idea, practice, or thing that is considered/perceived as new by the individual).

The problems described above describe the era of disruption, but disruption is not solely influenced by technological advances. Not just online a library service or startup business. But it is also influenced by the financing model down to culture and even ideology (Kasali, 2017). Information services in the library are not only in print but also digitally. Even for distance higher education it is not only physical visits but also library visits in cyberspace or on the internet. In Kasali (2017) it is said that there are at least five characteristics of the era of disruption. First, there are cost savings in jobs that become simpler (simple). Second, there is an increase in product or service quality. Third, it has the potential to create new markets. Fourth, products or services become more accessible and accessible to users. Fifth, make everything smart, accurate and time-saving. However, it is not only the changes that have occurred in business and the economy, but the main changes from the emergence of disruption, namely since the presence of digital technology, which has changed the system globally. So that it can be said that all sectors have experienced disruption, including education. The development of digital technology is able to replace human work. Digital platforms are capable of transforming production, distribution and advertising in media

Technological disruption is defined by Millar, Lockett, Ladd (2017) in Mardiana (2018) as technology that can potentially create innovation disruptions in products, services or business processes at every level, such as industrial structure, industry segmentation and social systems (changes in social relations).) In relation to changes caused by technological disruption, these changes result in the previous product, service or process becoming ineffective, for example a product is not created anymore (discontinuity), or technology is no longer used or provided

According to Priyanto (2018), disruption is a major change that produces efficiency and can cause problems, especially for those who are unproductive and unable to keep up with change. The impacts of this disruption include: (1) soaring prices for information sources; (2) the emergence

of media options for accessing information; (3) a shift in the use of conventional library resources; and (4) shifts in user needs.

One of the causes of disruption in libraries is due to the emergence of digital library technology developments. In the past, to look for references, articles, books or journals, you had to go to the library and/or bookstore. Now big data or mahadata serves everything. "Anything" information, various themes and topics, is available in eBooks, e-Journals, on SlideShare pages, SlidePlayer, academia.edu, as well as blog posts, "strewn" on various internet pages or websites and blogs.

Therefore Kargbo (2005) in Nasihuddin and Suryono (2018) said that the use of digital technology for library transformation must be followed by the enthusiasm of librarians in providing information services to the public. For example, librarians are required to be able to increase utilization, organize, preserve collections and disseminate knowledge, both local knowledge, community knowledge, and socio-economic knowledge.

3.2 Digital Library

According to Sismanto quoted by Subrata (2008) explains that a digital library is a system that has various services and information objects that support access to these information objects through digital devices. Digital libraries do not stand alone and their collections are not limited to electronic documents as a substitute for printed form, the scope of the collection extends to digital artifacts that cannot be replaced in printed form.

Susanto (2010) explains that a digital library or digital library is a library that has a large collection of library materials in digital format that is stored on a server computer, and can be placed locally, or in remote locations, but can be accessed quickly and easily through computer network.

Rodliyah (2012) explained that basically the notion of a library can be defined differently depending on each perception. There are those who focus on understanding access and retrieval of digital library contents where this perception comes from computer expert researchers. While other opinions that come from professional librarians place more emphasis on the aspects of collection, processing and digital library services. In Meaning, Achmad (2006) quoted by Saleh (2010) concluded that in a digital library there are several important elements that need attention, including:

    a. Digital libraries are organizations with a special purpose. In general, the goal of developing digital libraries is to collect, manage, store information or library materials in digital format.

    b. For collections served by digital libraries, namely digital collections.

    c. Digital library accessible via network. This means that digital collections are placed in one place, which can then be accessed via a network, be it a LAN, WAN, intranet, or the Internet.

    d. Digital libraries require staff with specialized skills. This is a necessity for librarians to have special expertise in addition to their previous expertise, especially in the IT field.

But unfortunately there are still many people who are confused about distinguishing digital libraries from bookless libraries. It should be noted that if these two things have differences, a digital library is not a bookless library. If a digital library is usually a development from a conventional library, which already has a good system then develops its digital system. Physically, digital libraries do not need to have a building or physical structure because everything is digitally systemized. Meanwhile, to build a bookless library, a building or physical building is needed. The collection is all electronic; nothing is printed, to access the collection, users need certain devices such as personal computers which are usually provided from the library or laptops.

3.3 Mobile Library Concept and Application (M-Library)

The term Mobile Library according to Fatmawati (2012) comes from the word mobile device, which is abbreviated M, which means cell phone and Library/Libraries, which means library. In this definition it is explained that the mobile library is the integration between mobile devices and libraries. The mobile device acts as a supporting tool in conveying information and helping users to reach certain services in the library.

In m-libraries.info (2011) cited by Nasution (2016) explains that the scope of M-Libraries is described as very broad, that is, any initiative that allows the use of mobile devices in the library can be included. Some of the scopes included in the concept of m-libraries include:

    a. Accessing library contents or collections through mobile devices, for example access to e-books, e-journals, e-databases, and other special collections that allow mobile access.

    b. Library text messages via SMS to answer questions or provide information to library users.

    c. Build a "mobile interface" for the library website or library catalog

    d. Using "QR codes" to connect electronic collections that can be accessed via mobile devices.

  e. Library staff or librarians use mobile devices in the library to support questions around them

  f. Build a mobile-based application (dedicated mobile app) to provide access to library collections or contents to users.

  g. Utilization of "augmented reality" in the library by using a camera on a mobile device.

  h. Using mobile devices to interact with activities in the library such as extending collection loans, checking service locations, ordering collections, performing tasks via mobile devices.

Talking about digital libraries, Fatmawati (2012) also explained that currently issues related to the m-library concept have emerged, namely where there has been a shift from traditional nomads to modern nomads. Modern nomads are people who move around but can study and work anytime and anywhere. So mobile technology has clearly influenced users so that they become modern nomads.

According to Fatmawati (2012) in its application, there are 3 important points that are key in integrating the system via mobile, namely:

  a. Integrating content with services (Integrating content with services)

  b. Developing innovative applications (Developing innovative applications)

  c. Ensure that the library is part of the institution's mobile strategy (Ensuring that the library is part of the institution's mobile strategy).

Figure 3 : M-Library from UGM
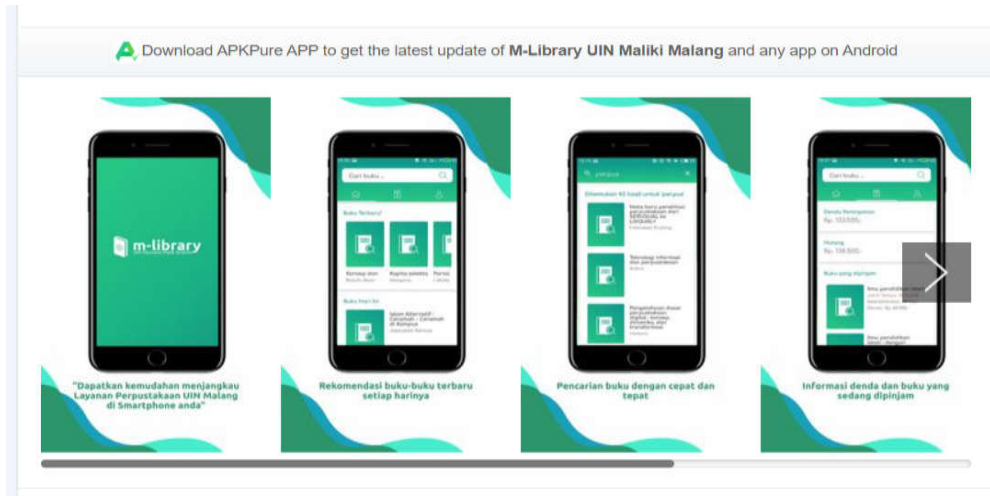
Figure 4 : M-Library from UIN Maliki Malang

As quoted in lib.unair.ac.id (2017) that in Indonesia itself there are already several Higher Education Libraries that have made mobile library applications including UGM, UI, UNSYIAH, DIY Regional Library and Archives Agency (BPAD) and many more. Following are some examples of m-library applications that have been implemented in several university libraries in Indonesia. Basically some of the core features that are usually found in mobile libraries include:

1. Log In
2. Member Registration
3. Circulation
4. Management of Members and Digital Collections
5. Log Out

4   CONCLUSION

Disruption and development of information technology today has affected libraries. This development can be seen from how technological disruption has made many applications, not only e-commerce, but also mobile libraries eventually emerge. In Indonesia, the application of mobile libraries is quite common, both in public libraries and university libraries. Some things that need to be considered in building and designing mobile libraries include applications that cannot be operated optimally. In this case librarians as HR in the library must understand from the start the concept of the mobile library, then make careful planning and finally be able to evaluate it. Even though this mobile application has been realized, the next step that should not

be skipped is promotion and routine maintenance that must be carried out. It is intended that this application can be widely known, then it can be used optimally by library users.

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