# Youth Behavior in Digital Age:
## *The Born-digital Archival Concepts*

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Abstract:    Along with technological developments, today's archival revolution has developed the concept of born-digital. This is the era in which archives have been created that are not printed on paper. Archives are also unwittingly created through daily virtual activities. This can be observed through the phenomenon of social media usage, which today most youths have, depending on its function. This paper aims to analyse the born-digital archival concept that occurs in relation to youth behaviour that has been embedded in the digital age. This paper used the qualitative approach; the data in this paper was obtained through literature studies and observations of social phenomena in Indonesia. The data obtained was collected, analysed, interpreted, and presented descriptively. The results of the paper show that the youth's habits and dependence on social media today unconsciously leaves a record and creates digital-archives, namely through online storage, making online documents, arranging documents by folders and through the use of social media included photo archives, documents, posts archive etc. The need for recognition and identity seeking has become the main factor of the youth's dependence on social media that also forms the born-digital archives.

## 1 INTRODUCTION

The rapid development of technology has greatly affected the changing habits of the people who are inside it. This development makes people slowly leave behind obsolete conventional technology and begin to welcome in the latest technology as its successor. Ease and freedom of access is one of the backgrounds of community migration using the latest technology to fulfil their information needs. All of their needs can now be found by smartphones, which are assisting tools. In its broad functions supported by internet access, people can do several tasks at the same time (multitasking). Therefore it will consume time more effectively and the person will get more productive.

The ease of internet access today is increasingly allowing societies to reach any information in seconds with unlimited access. Through the collaboration between smartphones and easy internet access support, an individual can do their work easily, in a lighter manner and in handheld. Such developments can drive the fulfilment of the daily information needs of the community. They even tend to rely on gadgets/smartphones in their daily activities.

The information obtained is certainly no longer attached to physical objects (printed) but it can be in digital form. The users in the digital environment are called the digital community. This ease drives people to think about changing their habits, from conventional into new habits, utilising the ongoing technology developing. Now with the technological advances taking place, habits are beginning to shift to the digital environment. Photos taken digitally no longer need to be printed and stored on conventional media, but they can be directly uploaded to online storage media. Such cases are mainly conducted by the internet generation who have internet literacy and the ability to surf their information needs in the digital form.

Based on the Internet World Stats survey in 2017, it was noted that the number of internet users in Indonesia ranked 5th in the world, after China, India, the US and Brazil; 143,260,000 individuals were active internet users with an internet growth of 7.063%. These results indicate that the literacy and awareness level of the technology development rate of the Indonesian people is above average. There has been a detailed composition analysis of the Indonesian internet users based on the age demographics categories by *Asosiasi Penyelenggara Jasa Internet Indonesia* (henceforth APJII) in 2017 : 49.52% were users aged 19-34 years, 29.55% were

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users aged 35-54 years, while 16.68% were users aged 13-18 years. The remaining 4.24% were users over the age of 54 years old. According to the data acquired from the survey, it can be concluded that the internet users dominated the productive ages, which is where the internet facility is needed to assist their work. Not only does it assist their work, the use of the internet can also be a tool in education and to meet the daily needs of young adults and youths as well. The youth use of the internet is mostly as a medium for learning, for building a networking in a friendship-based environment, and looking for public information to fulfil their information needs through their smart phone as an access tools. The networking needs of youths are inseparable from youth internet users.

The bloom of the social media phenomenon nowadays is an indicator of the dependence of human activities. Every single activity (office, household, and all human needs, both primary and secondary) is not spared from the use of information technology. Search histories and online activities are unconsciously created and collected into archives.

Search history and online activities are unconsciously created, collected and archived. These archives are personal archives as by being born-digital, the archive is created in digital form and not as the result of digitalisation (digitised archives) (Bountouri, 2017). Such a phenomenon mostly occurs in youths, in which it is a daily habit and tends to depend on online activities, especially social media. The importance of the study of born-digital archives in the youth's daily activities is apparent through good digital archive management and being able to facilitate and accelerate daily activities, especially when using social media and networking.

There has been a similar study conducted on the pattern of child and youth communications through the internet conducted by the Ministry of Communication and Information and UNICEF in 2014. The results revealed that the majority of adolescent communication was conducted with their peers. This was followed by communication with their teachers, and with their family members and was also significant. This paper will review and analyse the habits and digital activities of youths regarding born-digital archiving.

## 2 LITERATURE REVIEW

### 2.1 Born-Digital Archives

A digital archive is a repository that stores one or more collections of digital information objects with the intention of providing long-term access to the

information (Gerderen, 2005). The resources include items created and managed in digital form (Erway, 2010). There are different types of Born Digital Material according to Erway (2010):

- *Digital photographs*. The prevalence of digital cameras is making digital photos one of the fastest growing forms of born-digital content;
- *Digital documents*. Maintained in digital form, standard formats such as the Portable Document Format (PDF) are used to retain formatting, while separating the documents from the software that created them;
- *Harvested Web content*. Archives can harvest material from websites related to a particular subject or event. Open-source tools developed by the Internet Archive can be used to crawl and provide access to the content. The data can be kept in the ISO standard WARC (WebARChive) file format;
- *Digital manuscripts*. Personal "papers" can be created as born-digital manuscripts, which may accumulate automatically while archivists plan what to do with them. A very few manuscript collections may merit emulation in order to recreate the workspace of the author;
- *Electronic records*. This type of collection might consist mostly of documents in word processing formats or it may include an array of e-mails, databases, spreadsheets, presentations and other types of files, some of which can only be read using proprietary software. In most cases, it is best to get the content out of the proprietary format;
- *Static data-sets*. Some data-sets need special software and documentation to make them usable and the system may need to be retained or emulated. Context, including the nature of the sample, the data collection approach and software used, should be retained;
- *Dynamic data*. This type includes data-sets that are added to over time, that are time-based, or that include genetic sequencing or Computer-Aided Design (CAD). It can include data that is meaningless until it is acted upon—and there may be an infinite number of actions and results. In many cases, the software, if not the hardware, environment will need to be retained or emulated;
- *Digital arts*. Digital art may be as simple as digital photography or it may be much more complex in that it could be mixed media, dynamic, or could require the recreation of an entire installation to render effectively;

- *Digital media publications*. These are materials that are routinely published in digital form. Commercial publications like music CDs, movies on DVD, and video games are on fairly stable media and when those media is replaced, the content is often re-released in new formats.

## 2.2 Personal Digital Archiving

Personal files contain the documentation of individual lives and human personality. While these finds often reflect the recorded evidence of the functions of the creator, in the same way that the finds of organisations do, personal archives also contain traces of the individual character of the record's creator (Hobbs, 2001).

Personal archives require a different appraisal approach than administrative or government records. A starting point for this new treatment could be concerned with how we conceptualise the records and how we approach them during the acquisition process (Hobbs, 2001). Personal archives are not only about the transactions of "official" personal business and formal activity, but they are also a prevalent source of commentary on daily and personal life and relationships, by their very nature. Broadly put, the finds of an individual are a site where their personality and the events of life interact in documentary form.

Personal archives reflect not only what a person does or thinks, but who they are and how they envision and experience their lives. An individual creates records to serve his or her needs, predilections or personality, not because some law, statute, regulation, or corporate policy says so.

Regardless of any perceived historical or cultural value, personal digital archives represent an important chance for individuals to give voice to their own perspectives, to make sure that the cultural record reflects their lived experiences and to share their stories with other people if they choose.

Well-managed personal archives will also make it easier for individuals to maintain control over their personal digital files and allow them to make well-informed decisions about how their files are used in daily life, while allowing them to plan for the preservation or disposition of their digital files after death.

Redwine (2015) stated that technological obsolescence and a lack of planning are two of the most obvious threats to the wellbeing of personal digital files, but less visible threats can be equally harmful. Most of the risks to digital files fall into the following categories:

- Ageing hardware and software;
- A lack of secure storage and backup;
- Natural and man-made disasters;
- Neglect;
- The loss of cloud-based hosting or service providers;
- A lack of planning and
- The death of the individual.

Moreover, there are 3 main recommendations provided Redwine (2015), addressing the key threats to personal digital files, namely Quick Wins, More Effort, and Maximum Effort:

*Firstly*, Quick Wins. The archives owner/crerator should:

- choose software that is well supported and that creates files that can be read by a variety of different programs;
- develop file naming conventions that are easy to remember and apply them consistently;
- create multiple back-up copies and store them in different geographical locations;
- test the back-up copies to make sure that they are accessible and contain what they intend them to; and
- transfer files to new media every 2 to 4 years..

*Secondly,* More Effort. The archives owner/crerator should:

- access the stored media regularly to confirm that it is in good working condition;
- regularly transfer and back up photos, videos, and other important digital files from mobile device(s) to a more secure form of storage, either cloud-based or physical media such as a computer's hard drive;
- be conscientious about migrating files to newer file formats if the software necessary to open them is becoming obsolete;
- compare cloud storage providers and do the legwork to find a secure service and
- maintain more secure, geographically-distributed back-up copies of your files both in the cloud and on physical media.

*Thirdly,* Maximum Effort. The archives owner/crerator should:

- survey their digital files and create an active plan that includes selecting files for safekeeping, assess the need for file format migration and utilise secure and backed up storage;

- identify and locate the hardware and software necessary to access obsolete formats in their care and
- reorganise and rename unidentified files in accordance with their used file naming conventions.

### 2.3 Youth Behavior

Adolescence is a period of life in-between childhood and adulthood. It is described as a time of experimenting with roles and identities, still void of the burden of social norms and obligations yet slowly preparing the youngsters for their lives as full members of the social collective. During this process of social integration, young people find themselves in a complex social system, composed of elements such as tradition, history, social demands, hopes and individual future prospects, all of which they have to incorporate into a coherent picture in order to build a proper foundation for their personal life. Step by step, they have to obtain new social roles and extend their range of social performance (Henze, 2015).

Youths make up the largest percentage of internet users and the users of telecommunications gadgets. "As the early adopters of new media, youths are, in many ways, the defining users of new media" (Montgomery, 2001). Today's young people are the generation of 'net-geners', who have their own uniqueness. Their brains have developed differently. Their brains process fast-moving images differently" (Tapscott, 2009 in Zimic, 2009). Participating in online media is one of the distinguishing features of today's youth character, as a digital generation compared to the youths of the previous age.

## 3 RESEARCH METHODS

This study used a qualitative approach, where the data was obtained from several theories relevant to conditions in the field related to the practice of born-digital archives in the youth environment and then examined qualitatively. Conclusions were drawn up according to the data.

## 4 RESULT AND DISCUSSION

### 4.1 Youth Behaviour in the Digital Age

Rahmayani (2015) predicted that in 2018, Indonesia will become "the sleeping digital technology giant of Asia." Supported by data from the Digital Marketing

Research Institute (e-market), it estimates that in 2018, there will be more than 100 million active smartphone users in Indonesia. With such a large number of users, Indonesia will become the country with the fourth largest number of active smartphone users in the world after China, India and America. Based on this data, it can be concluded that there is great potential for Indonesia in the area of equitable technological mastery. This needs to happen, because one indicator of the development of a country is the prevalence of public services and the affordability of technology evenly.

According to Pertiwi (2018), the research conducted by We Are Social in the Kompas issued on March 1st 2018, a British media company working with Hootsuite, the average Indonesian spends 3 hours and 23 minutes a day accessing social media. From the report entitled "*Essential Insights Into the Internet, Social Media, Mobile, and E-Commerce Use Around The World*" published on January 30th, 2018, out of Indonesia's total population of 265.4 million, there are 130 million active social media users with a penetration level of 49 percent. This data is a reflection that Indonesian people have digital activities that are very active on social media as a container for meeting increasingly diverse information needs. The more active they are in their activities on social media, the more digital traces are left behind by the social media users. Either consciously or unwittingly, social media users have also collected born-digital digital archives.

### 4.2 Conscious Born-digital Archiving

Sometimes consciously, born-digital archiving can be conducted by digital age youths. One of the habits of youths today is relying on cloud storage. This requires an internet network to store digital files. The digital files that they have are uploaded and stored in cloud storage. It is intended that the data or files can still be used and that they can be stored for longer and are safer in the process. Most of the digital files and data are born-digital, which includes image files originating from digital camera devices, mobile phones and office files that have not been printed on paper. There are several cloud storage servers that are often used including Dropbox, Google Drive, One Drive, 4shared, Mega, and so on. Youths today have taken advantage of these facilities, with them even becoming the mainstay of alternative storage that is relatively safe from viruses and other digital disturbances.

Certain management is needed to assist the owner of the archive in organising the digital

archives created, especially when looking for archives that may be needed in the future. Management is carried out in order to be able to adjust things personally, so then it can be easily understood and accelerated, as well as being a security technique. This is because only the owner can understand the details of the storage and have access to the born-digital files or archives that he owns.

In conscious digital archiving, there are 3 split main recommendations put forward Redwine (2015) addressing the key threats to personal digital files. Firstly, is Quick Wins. The archives owner/creator should:

- choose software that is well supported and that creates files that can be read by a variety of different programs. In this case, the owner must archive software that can produce digital files that can be read by other software in general. This is also related to the digital file format that is produced. For example, a digital file in the form of an extension document (.docx) will not be readable by certain software, because the (.docx) version is too high and the file reader does not support the file. What is done is to reduce the format to (.doc), (.odt) or (.rtf),
- develop file naming conventions that are easy to remember and to apply these consistently. Anticipating file owner negligence is necessary in digital archiving, therefore there needs to be a kind of guideline that refers to consistent and ultimately useful digital file naming in retrieval;
- create multiple back-up copies and store them in different geographical locations. Even though digital files are stored in the cloud, it is also still necessary to physically backup or put files on different cloud services. This is to anticipate the worst possibility that the saved file is corrupted, lost, or damaged;
- test the back-up copies to make sure they are accessible and contain what they are intended to. There is a need to check the backup files regularly to make sure that the files are still accessible; and
- transfer files to new media every 2 to 4 years. Periodically backing up data every 2 to 4 years anticipates unwanted things. If the born-digital file is stored in the cloud, then the archive owner must backup to a different account and even to a different vendor. This is done so then the risk of losing data due to the risk of bankruptcy of the cloud storage

companies that are not responsible for digital files.

*Secondly*, is More Effort. The archive owner/creator should:

- access the storage media regularly to confirm that it is in good working condition. Through regular checking, the archive owner can ensure that the digital files are safe and properly accessed;
- regularly transfer and back up photos, videos, and other important digital files from their mobile device(s) to a more secure form of storage, either cloud-based or physical media, such as a computer's hard drive. This can be done automatically by synchronising the device with cloud storage;
- be conscientious about migrating files to newer file formats if the software necessary to open them is becoming obsolete. Updating the file format can make a file that can initially be read properly, unable to be read once updated. Analysis is needed before converting digital file formats, to determine whether or not it is compatible with the reader;
- compare cloud storage providers and do the legwork to find a secure service. Conducting a comparison of the services, security and features in order to minimise file loss;
- maintain more secure and geographically distributed back-up copies of your files both in the cloud and on physical media. Maintaining and paying attention to storage security and backing up to different locations is something that digital file owners need to consider.

Thirdly, is Maximum Effort. The archive owner/creator should:

- survey their digital files and create an active plan that includes selecting files for safekeeping, assessing the need for file format migrations, and utilising secure and back-up storage. The archive owner needs to carry out active surveys and plans related to security assessments and digital file format conversion needs. This is done for storage effectiveness in cloud storage, and relates to the access to the files;
- identify and locate the hardware and software necessary to access obsolete formats in their care. If the digital file has been stored in cloud storage and the file is in an old format, then the owner of the archive needs to adjust the reader in the form of the software and hardware used for access;

- re-organise and rename unidentified files in accordance with file naming conventions. Analysing digital files that are not organised needs to be conducted so then the files can be found and used properly.

## 4.3  Unconscious Born-digital Archiving

Without realising it, every individual activity, especially that conducted by today's teenagers in cyberspace, will always be recorded and become digital traces. The trace can be reused for certain purposes in the future. This is related to the use of cloud storage and social media, which are often used by teenagers today in expressing their daily activities.

Typical cloud storage public applications are mostly served as SaaS layer services to users. There are many cloud storage applications that offer synchronous backup, document saving, offline downloads, online editing and document sharing. Typical cloud storage enterprise applications mostly serve the user with the IaaS layer. Providing basic storage facilities and basic storage backup services for developers (mainly for enterprises) are rented to facilitate their own office or business needs (Liu, 2016). Software that has a synchronous backup feature makes it possible to auto-backup and copy digital files automatically and then save them to the cloud storage. This is so then, without the owner of the file actively engaging, born-digital files (photos, videos and other types of documents) on someone's gadget can be automatically backed up. Usually, synchronous backups occur on smartphones or computer devices and laptops that are set up and connected to cloud server accounts. Some commonly used cloud storage applications provide synchronous backup features including Google Drive, OneDrive, Google Photos, Samsung Clouds, Iclouds, and many more.

In addition to cloud storage that provides synchronous backup features, activities on social media are also recorded accidentally and without user commands being input. For example, the search history on Instagram will automatically record each user or keyword typed in the search field. This is done so then the users can easily access the search according to the last keyword typed before. In addition to the user search history, on Instagram, there are Posts Archives that keep all old posts without the owner's order. In addition to this, there are story archives; stories that have been uploaded for 24 hours that have not been deleted. They are automatically uploaded to story archives, and photo

tags, favourites, direct messages lists and notification files according to the activities of their followers or followed users on Instagram are also examples of unconscious archiving. In addition to the two examples above, cookies in browser applications are also examples of digital-born archives that are accidentally collected to store all of the user's search history in a browser account. For example, on the Safari browser and on the Chrome browser.

Another online activity that is usually done by teenagers today is one that utilises an online document editor application that is easily affordable and tends to be safe against viruses. For example, students often use G Suite, Google docs (which consists of Word, Excel, or Powerpoint). By utilising these facilities, students or users can directly save straight to the available cloud storage, namely Google Drive. After that, the file / document can be opened, edited, and downloaded at any time and anywhere. It is affordable without paying attention to either distance or time. Another advantage of using this feature is that you can share documents simply by getting the document link and sharing it with friends or colleagues.

## 5  CONCLUSION

Archiving can occur consciously or otherwise. Archiving is intentionally carried out by youths in a variety of ways that utilises cloud storage, allowing them to organise their digital files. The phenomenon of social media that is rife today can also be viewed in archival science, where archiving occurs unconsciously and where the archives collected are born-digital archives. Youths can take advantage of these developments to build a network of friendships and to support their learning.

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