Perpustakaan Digital Budaya Indonesia (PDBI): Efforts at Preservation of Knowledge of Cultural Heritage through Crowdsourcing

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Abstract

Perpustakaan Digital Budaya Indonesia (PDBI) was initiated by the organization Sobat Budaya to act as a space to preserve the richness of Indonesian cultures. Sobat Budaya realized that data on the cultures of Indonesia could not be collected by a small group of people, so it created a data-crowdsourcing mechanism for the public to participate. Anyone could become a contributor, data could be uploaded anytime from anywhere, and since it was established in 2009, there have been 3451 contributors. This project had three purposes: 1) Establish PDBI as one of the main sources of information on Indonesian cultures; 2) preserve knowledge of cultural heritage; and 3) examine how a data-crowdsourcing mechanism could contribute to this. The research used a qualitative approach with a case study method, collecting data by observation, interviews, and a literature review. The research found that: 1) PDBI collected significant cultural heritage data, with 15418 entries classified into 15 categories; 2) there are nine preservation strategies; and 3) the data-crowdsourcing mechanism helped collect data from various regions. Thus, PDBI helped to create a sustainable data-preservation movement.

Keywords— crowdsourcing, cultural heritage, Digital Library of Indonesian culture, preservation

1. Introduction

Indonesia is a diverse country with many unique cultures, including dancing, food and drink, rituals, and performance art. These cultures are an important source of identity for future generations and, if not managed well, could face extinction. One non-profit organization (Sodat Budaya) realized the importance of establishing a database of Indonesian culture as a means of preservation, and initiated a movement called Sejuta Data Budaya, whose aim was to collect data on different cultures across the country, and from this arose Perpustakaan Digital Budaya Indonesia (PDBI), an attempt to perform traditional cultural heritage preservation untraditionally. Hokky Situngkir, the grandson of the Indonesian composer Satu Nusa Satu Bangsa, highlighted some of the reasons why this collection process is important (Press release, 2009): (1) the existence of a cultural database will prevent disputes around intellectual property rights of culture, or foreign claims on Indonesian cultural artifacts; (2) strong empirical data to encourage cultural research; and (3) the cultural database will encourage more rapid cultural innovations that can enrich themarket for cultural products, resulting in broad socio-economic benefits.

The development of technology makes all people can be connected to each other in the network. PDBI also used a crowdsourcing mechanism to collect data on cultural heritage. Applications were created that made it easier for Indonesians to send data regarding cultures that they know. Ridge (2014) noted that crowdsourcing, or asking the general public to help contribute to the shared goals, is increasingly popular in memory institutions as a tool for digitizing or computing vast amounts of data. Thus, crowdsourcing is expected to be a useful tool in collecting data on the history of a nation.

The main concept in crowdsourcing is unlimited involvement, regardless of educational background, citizenship, or religion, for any person who wishes to contribute to an issue suggested by an individual, organization or company. This method is indirectly supported in Government Regulation No. 66 of 2015, regarding the role of the community in the preservation museum. Article 52 states that every person and / or Customary Law Community can participate in the management of museums as a form of community participation on the protection, development, and / or utilization of museums. The participation of the community in assisting the Management of the Museum is based on the principles of transparency and accountability.

An earlier work on the role of digital libraries in cultural heritage preservation was published by Anik Fara Noviana under the title “Perpustakaan Digital Arsip Musik: Sebuah Upaya Preservasi Warisan Budaya Bangsa Indonesia di Era Digital Native”, and published in the proceedings of the National Seminar “Kreatifitas Pustakawan pada Era Digital dalam Menyediakan Sumber Informasi bagi Generasi Digital Native.” The author conducted a case study at PDBI...
which included traditional Indonesian music, and emphasized how PDBI’s strategy of knowledge preservation and crowdsourcing mechanisms can help preserve cultural heritage.
2. Literature Review

According to the International Atomic Energy Agency (IAEA, 2011), preservation of knowledge is, “a process of protecting an organizational system of knowledge and capabilities that preserves and stores perceptions, actions and experiences over time and secures the possibility of recall for the future.”

The strategy of preservation of knowledge includes nine steps: 1) Identification: deciding which knowledge should be processed and preserved; 2) Capture: loading data, information and knowledge; 3) Creation: creating new knowledge, which may happen through analysis, interpretation or learning, or based on totally new innovations; 4) Processing and transformation: sorting, filtering, styling, organizing, simplification, compilation, interpretation, correlation, or manipulation that changes data, information or knowledge into a form that gives added value, utilities or additional meaning; 5) Storage and retention: allows data, information or knowledge to be stored in a knowledge base of the organization; 6) Search and retrieval: facilitates the location of and access to data, information or knowledge in the knowledge base; 7) Representation: improving the understanding or conceptual presentation of data, information or knowledge through audio and visual means; 8) Transfer and exchange: enabling sharing data, information or knowledge; 9) Maintenance and updating: maintaining the knowledge base of the organization.

According to Davidson (1991), cultural heritage is defined as the product or result of the physical culture of different traditions and spiritual achievements in the form of the value of the past which became the central element in the identity of a group or nation. Meanwhile, Andika (2007) defines cultural heritage as a legacy of the past that passed from one generation to the next that must be preserved, whereas Galla (2001) states that cultural heritage consists of tangible and intangible cultural heritage. Tangible cultural heritage Cultural Heritage is physical cultural heritage, consisting of immovable objects (such as historical sites, landscaped land, buildings and/or historic statues of warriors) and moveable objects (art, archives, documents, photos, cassettes, video and film).

According to the World Heritage Convention, any physical cultural heritage is divided into three categories: (a) Monument is a work of architecture, statues or paintings, or archaeological heritage, inscription, or cave shelter which has important value for history, culture and science; (b) group of buildings: a group of separate or related buildings that due to its architecture or its position in the landscape has important value for history, culture and science; and (c) sites: man-made or a combination of man and nature, which are important for history, aesthetics, ethnography or anthropology.

Intangible cultural heritage is passed down from generation to generation, recreated by society in their interactions with their environment, nature, and history. Examples of inheritance in this form include songs, myths, superstitions, and various forms of traditional knowledge.

The preservation of the knowledge of cultural heritage is an effort to preserve and retain knowledge of heritage passed from one generation to the next to avoid the threat of extinction. Thus, the knowledge of the culture is retained and can be utilized for the future in the interest of the nation’s progress and development. According to Karmadi (2007), there are strong motivations for preserving cultural heritage knowledge: (1) maintaining and passing on the cultural heritage inherited from previous generations; (2) increasing the knowledge and love in the next generation of the historical values of the nation; (3) ensuring diversity or variation of the cultural environment; (4) increasing the commercial value of local culture to improve the welfare of its practitioners; and (5) a belief that local culture is a manifestation of the identity of a group or society so that it can cultivate a sense of pride, self-esteem and strong confidence.

From the Thus, the preservation of local culture can also have an ideological basis, as a movement to establish cultural history and identity (Lewis, 1983: 4), and to create a sense of community among the public to encourage a sense of belonging (Smith, 1996: 68). Crowdsourcing is an online participatory activity whereby individuals, institutions, nonprofits, or companies propose a voluntary task to a group of individuals with varying knowledge, heterogeneity and quantity, through a flexible open call. Participants must be willing to spend power, effort, knowledge, and even money in order to achieve common goals, but will receive compensation, whether it be money, social recognition, self-esteem, or skills development. Meanwhile, the parties who ask for participation will benefit from what participants bring into the organization (Daren, 1982). An alternative definition is that crowdsourcing is an activity or action undertaken by a company or institution that takes one of the job functions or duties that its employees should perform and disseminates it openly and freely to a person or crowd connected to a computer network (Howe, 2009).

3. Research Methods

This research took a qualitative approach using a case study. This method focuses on a case or multiple cases through the collection of detailed and in-depth data, and involves various information sources such as interviews, observations, documents, and reports (Creswell, 2015). Thus, this method can contribute to an understanding of the development of PDBI as a cultural heritage preservation effort in Indonesia. Data collection was done through observation of the PDBI, interviews with PDBI management (Oase Kirana Bintang, Chief Executive of Sobat Budaya); and a literature review.
4. Results and Discussion

PDBI is a digital library formed by the Sobat Budaya community that concentrates on the collection of data on cultures spread throughout Indonesia. The Indonesian cultural database displays thousands of information sources, ranging from journals, articles, and personal travel notes, to government-owned websites. Indonesians generally only have access to limited information about Indonesian culture that is valid, accountable, and free, and PDBI tries to fill this void by providing a one-stop service.

The vision of PDBI is to encourage the preservation and development as well as data collection of Indonesian culture and its missions include: 1) develop and develop the PDBI, 2) strengthen legal protection of Indonesian culture, 3) encourage Indonesian cultural research, 4) promote cultural diversity of Indonesia, 5) encourage Indonesian cultural education, and 6) encourage participation and public appreciation of Indonesian culture. The objective is to provide an adequate Indonesian cultural encyclopedia, contributing to cultural protection, cultural research, and innovations aimed at the development of people's economy and social welfare.

Although building a Digital Library to preserve cultural heritage is a noble task, it is not without obstacles. According to the Chief Executive of Sobat Budaya, the most common obstacle is low public interest in data collection:

“Public interest in data collection is still low. It is not easy to socialize the public about data collection, although the details have been explained, most people are lazy… But we are not going to stop there. Sobat Budaya will be constantly arguing and proclaiming cultural traditions through a variety of activities… cultural traditions are no longer considered ancient occultism” (09/11/2017).

The lack of data means that information on Indonesian culture has not been reported to the World Intellectual Property Organization (WIPO). He explained as follows.

“Data on Indonesian culture has not yet been registered in the WIPO, but surely will be registered at a later time when we meet the target of the data we want to collect. It was our plan from the beginning of the initiative… it is a good way for a multitude of data to be registered quickly with the WIPO” (9 November 2017).

Maintenance and updates: PDBI has a team dedicated to maintaining the knowledge base of the organization. By crowdsourcing a digital library of Indonesian culture, the public was invited to participate, and Crowdsourcing itself can be done using web people who are motivated to preserve cultural heritage can join and work together. Since 2009, Sobat Budaya has established 35 communities in cities in various provinces, while PDGI has 3451 contributors with the right to upload data into the site. The Chief Executive of Sobat Budaya stressed that, “There is no requirement to become contributors. Only create an account on the web if you want to submit data” (November 9, 2017). He also noted the following:

“Currently from the database it does seem we are prioritizing quantity, but we already have a web monitoring team that selects the data submitted, so the quality of the data is being observed, data verification will be inaugurated later when it is the right time to register data to the World Intellectual Property Organization. That is our goal when the data set is more complete than at this time” (9 November 2017).

A number of contributors added testimonials on the site, detailing which aspects of the process they found positive.

“I have become an official member of the Sobat Budaya, I have also been uploading some Kutai Kartanegara cultural data that I know… such as the Festival of Culture Erau, woven cloth Ulap Doyo, the Art of Dance etc. So friends who want to know about the culture of Kutai Kartanegara can also see it on the website… Because I know that Kutai Kartanegara has rich customs and culture and I want all the people in Indonesia and even the world to know about it, and this I think is one of my ways to introduce the culture” (contributor to Sobat Budaya).

“Data collection was good for study materials, but unfortunately the data is not stored neatly. This movement performs cultural data collection and then places it into the website… There are 14 sectors of cultural data on this website, from Musical Instruments, Folklore, Beverages, Fabrics, Music and Songs, Ancient Scripts and Inscriptions, Ornaments, Traditional Clothes, Traditional Games, Architectural Products, Rituals, Performing Arts, Weapons and War Tools, Dances, Treatment Procedures and Health Maintenance… It is also important to learn that the field of culture is very broad” (contributor to Sobat Budaya).

From the two testimonies above, we can see that PDBI is an innovative way for the people of Indonesia to highlight their love for the nation by documenting the richness of Indonesian culture, and helping to preserve their cultural heritage.

**Strategy of Preservation of Knowledge by PDBI:** Beside provided storage for data of Indonesian culture, Sobat Budaya also actived in the cultural data collection. So, it can provide the instructions for the contributors how to preserve data cultural. The following PDBI strategy in the effort of preservation of knowledge:

1. **Identification:** PDBI was managed by Sobat Budaya that has involved in search of Indonesian culture data by doing a cultural expedition. They came to the various regions in Indonesia to catch the traditional knowledge of the cultural heritage that haven’t yet been documented.
2. **Capture**: In the Technical Guidance of cultural expedition explained how documenting cultural building, the importance of the search for information about the building, documenting the site of old, and documenting the village. This shows that there is a process that is done to take data, information and knowledge. All of these guidelines used to capture knowledge in cultural heritage.

3. **Creation**: Batik physics, Analysis regional song, and cultural collaboration with the other sciences is a form of creation process of new knowledge. In it there is a process - analysis process, interpretation or learning or based on the idea or totally new innovations.

4. **Processing and transformation**: Data mining is a form of the activities of the process and the transformation of because there are moving activities and styling culture documentation scattered in the virtual world into the system that has been made, PDBI.

5. **Storage**: As the main task of PDBI is storage of cultural heritage of Indonesia.

6. **Search and retrieval**: In the system established by the PDBI, system retrieval of information provided by PDBI. The search engine will help to find information toward elements that search.

7. **Representation**: To improve understanding, Sobat Budaya liked to socialize both through audio and visual means. PDBI provided a website, social media that allows anyone to find information and articles related to Indonesian culture easily.

8. **Transfer and exchange**: PDBI can be accessed by anyone. Sobat Budaya transfered knowledge through various activities such as invited the crew of the mass media, active in social media such as Facebook, Instagram, Twitter, and YouTube. In addition, Sobat Budaya has many programs such as goes to campus, book discussion and work together with the school. These activities for sharing knowledge and experience. The large number of contributors who participate in the cultural data indicates that the knowledge conveyed by the Sobat Budaya has been captured and interpreted.

9. **Maintenance and updating**: PDBI has a team dedicated to help maintain a knowledge base of the organization.

5. **Conclusions**

PDBI is currently the only digital library that concentrates on preserving the Indonesian culture. There are nine strategies used by PDBI in preservation including identification, capturing knowledge, knowledge creation, processing and transformation, storage, search and retrieval, representation, transfer and exchange, and maintenance and updates.

Crowdsourcing, the Digital Library of Indonesian Culture is able to collect cultural data more quickly than relying solely on exclusive communities. In addition, a key aspect is motivating the population to maintain cultural heritage, and the contributors of PDBI are motivated to uncover, maintain, defend and pass on the cultural heritage they inherited from the previous generation. They are also hoping to increase the knowledge and love of the next generation through the inheritance of cultural treasures and cultural values that can be seen, remembered and lived. This paper found three different forms of motivation for contributors: 1) The motivation to ensure diversity by jointly building a database of Indonesian cultural diversity; 2) economic motivation, believing that local cultural values will increase if properly maintained; and 3) symbolic motivation that believes that local culture is a manifestation of the identity of a group or society, helping it grow a sense of pride, self-esteem and strong confidence. It therefore seems that PDBI has created a space to encourage this.

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**References**


