
**Protecting Batik Customers and the Existence of Pekalongan Original Batik
by Augmented Reality Technology Based on Cloud Computing in Batik Label**

Paminto Agung Christianto, Eko Budi Susanto, & Ichwan Kurniawan

STIMIK Widya Pratama Pekalongan
E-mail: p_a_chr@yahoo.com

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Abstract

The wrong assumption stating batik printed textile batik is similar with original batik bears a loss for batik producers, because customers tend to buy printed textile which are cheaper than originals ("tulis", "cap" or "combination" batik). The misperception used by some batik entrepreneurs who mentioned that products he sold are kinds of original batik, although they are printed textile. It disrupts the existence of Pekalongan traditional batikas well and many customers experience losses. This research is an effort to support Indonesian government in maintaining batik as an Indonesian cultural heritage, and Pekalongan city government in maintaining the existence of "World's city of Batik" by issuing Regional Regulation No. 6 of 2014 Pekalongan about the use of Pekalongan batik label. Through the use of augmented reality technology based on cloud computing, it will create a "Batik Pekalongan" label which provides information about the authenticity of Pekalongan batik products through smartphones access, and convenience for Pekalongan city government or Pekalongan ASEPHI in supervising the use of the label. Therefore, it will not be misused by unscrupulous batik entrepreneurs.

Keywords:

Batik, original, printed,
protection, supervision

1. Introduction

Batik has been developed in Pekalongan and make this city known as “The World’s City of Batik”. In 2015, UNESCO recognized Pekalongan as one of the world’s creative cities and in 2009, UNESCO recognized Indonesian batik as an unform heritage that must be preserved.

Batik has several types, namely *tulis*, *cap* and a *combination* batik. Those types involve in original batik criteria, which takes a long time and complexity in making process and make it expensive to buy. However, many customers still prefer those batik. The customer’s high interest used by batik entrepreneurs to make batik printed textile using batik printing machine and modern technology, that fasten the process of making batik and lower the price.

The customers’ ignorance in distinguishing between the original batik and printed textile products lead them to the wrong perception. They assume that batik printed textile is the same as the original batik. This misperception gives a tendency for customers to prefer printed textile which is cheaper than original ones, and this case causes a loss for some of batik producers in Pekalongan. This problem forces some batik sellers claim that the product they sell are original batik, although actually they are printed textile, so the customers suffer a loss. This factor disrupts the existence of original batik in Pekalongan.

One of the efforts of Pekalongan government to protect the existence of batik and its customers is by issuing Regional Regulation No. 6 of 2014 Pekalongan City about the use of Pekalongan batik label. In cooperation with the Association of Exporters and Manufacturers of Indonesian (ASEPHI) Pekalongan, on April 12, 2016 inaugurated the use of traditional batik hologram as a warranty for the customer that the product he bought is original batik, not printed textile. Original batik hologram has 3 (three) colors, which are gold for the type of *tulis* batik, silver for the type of *combination* and white for the type of *cap* batik.

Based on interview with Batik Bulan owner on Monday (May 22, 2017), it was found that the use of original batik hologram did not run well and it was not supervised by Pekalongan government or ASEPHI. Therefore, some unscrupulous batik sellers use the hologram by sticking it on inappropriate batik products and even they stick it on printed products.

In this research, we will create a “Batik Pekalongan” label which utilizes augmented reality technology based on cloud computing to provide information about the authenticity of products through smart phones access. This utilizing eases Pekalongan city government or ASEPHI in conducting supervision as well.

2. Research Methods

In this research, data is obtained through several ways, which are observation, interviews, questionnaire distribution and literature studies.

1.1. Observations

Observations conducted on some batik entrepreneurs who are also members of Pekalongan ASEPHI. Through this observation, there are several information obtained:

- a. Batik making process, whether it was *tulis*, *cap* or *combination* require a long time and complicated process.
- b. Batik hologram sticking can be done freely by batik producers without any supervision from ASEPHI.



Figure 2. 1 Original Batik Hologram Pekalongan

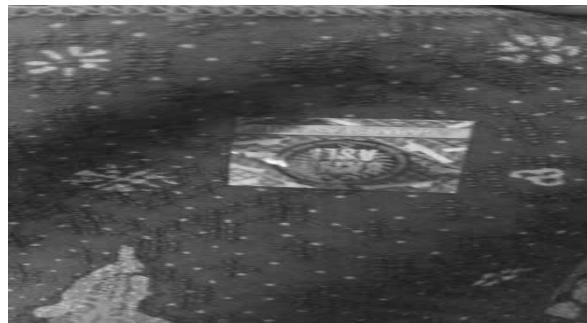


Figure 2. 2 Sticked Original Batik Hologram

c. There is still high interest in buying batik products stucked by original batik hologram.

1.2. Interview

The following is the result of interview to Wulan Utoyo as the owner of Batik Bulan Pekalongan Monday (May 22, 2017), who is a member of ASEPHI Pekalongan:

There are several problems related to batik business, which are:

- a. There is significant difference price between the original batik and printed textile, which is often used by unscrupulous batik entrepreneurs to deceive customers who cannot distinguish between the original and printed one.
- b. Most of the customers think that printed textile is similar with batik products, whereas the printed textile is categorized as textile product.

There is one way to distinguish between original batik with printed textile, but many customers do not understand it. Some of these ways are:

- a. Knowing the product deeply (if the drawing and coloring of the motive is not precise, it must be original batik)
- b. Smelling the product (batik has different making processes with printed textile, so the smell will be different)
- c. Looking at the physical form of the product.

The existence of the Regional Regulation No. 6 of 2014 Pekalongan requires all batik producers to stick "Batik Pekalongan" label in order to maintain the existence of batik from the invasion of printed textile. However, the implementation of the local regulation must be accompanied by supervision from the Pekalongan government / ASEPHI. Therefore, it is not misused by unscrupulous batik entrepreneurs to gain profit in an inappropriate way.

1.3. Literature Study

The obligations of batik entrepreneurs listed in chapter 3 and chapter 6 of Regional Regulation Number 6 Year 2014 Pekalongan City about the use of "Batik Pekalongan" label, are:

- a. Batik entrepreneurs are required to provide correct information related to the type of batik, by sticking the "Batik Pekalongan" label in accordance with the local regulation.
- b. Batik entrepreneurs in Pekalongan must stick "Batik Pekalongan" label on batik they sell, either inside or outside Pekalongan area.

In chapter 11, there are administrative sanctions for batik producers who disobey the regulation. It can be in the form of warning, marketing prohibition, or revocation of business license.

1.4. Distribution of Questionnaires

1.4.1. Group of Batik Customers

There are 65 batik customers from various places in Pekalongan. Here is the information based on the respondents:

- a. 87% of customers find difficulties in distinguishing between batik and printed textile. Therefore, in order to know the differences, customers should ask the batik producers.
- b. 92% of customers state that batik in wholesale markets or batik shops in Pekalongan has not stuck the batik hologram on the products.
- c. 93% of customers stated that they support the implementation of city regulation No. 6 year 2014, as a form of customers protection.
- d. 97% of customers support the easy access of information through smartphone related to authenticity of batik products.

1.4.2. Group of Batik Producer Respondents

Based on the result of 15 batik producers, the result is as follows:

- a. 93% of batik producers support the implementation of regional regulation No. 6 Year 2014 to protect the existence of Pekalongan batik.
- b. 97% of batik producers stated that there must be supervision by Pekalongan/ASEPHI Pekalongan towards the attachment of batik hologram.
- c. 94% of batik producers support the availability of batik label to ensure the authenticity of the product (from customers' smartphones) and supervise the sticking of batik label (by Pekalongan government/ASEPHI Pekalongan)

The data is analyzed to identify the problems and find a solution.

2. Discussion

After analyzing the data, there are several problems found, as follows:

2.1. Problem Identification

- a. Customers unknowing/misperception in identifying batik printed textile interferes the existence of batik in Pekalongan
- b. The absence of supervision from Pekalongan government/ASEPHI Pekalongan in the use of original batik hologram enables the implementation of Regulation no. 6 Year 2014 does not work well. This case interferes the efforts of Pekalongan government in maintaining the existence of original batik and protecting batik customers as well.

2.2. Identification of Necessity

- a. Customers need marker of batik authenticity that can be accessed easily through smart phone.
- b. Batik producers need a marker of batik authenticity to reinforce customers' believe in the information provided.
- c. Batik producers need marker of batik authenticity under government / ASEPHI supervision
- d. The marker is "Batik Pekalongan" label in accordance with Regional Regulation No. 6 Year 2014

According to the identification, the implementation of Batik e-Label is needed to identify the authenticity of original batik products and provide convenience for the government/ASEPHI Pekalongan in supervising the implementation. The application utilizes Augmented Reality (AR) technology based on Cloud Computing. By using the marker on the label, there will be displayed some information stored in user's database. The users of this application consist of Pekalongan Government, Pekalongan ASEPHI, Batik Producers, and Batik Customers as seen in the following table:

Table 2. 1 User System

NO	Users' Name	Information
1	Pekalongan government	Supervising the use of "Batik Pekalongan" label
2	Pekalongan ASEPHI	<ul style="list-style-type: none"> - Supervising the process of "Batik Pekalongan" labelling by the members. - Conducting validation for each registered product by the members (if there is no validation, the information has already entered by members, cannot be accessed by customers)
3	Batik Producers (members of Pekalongan ASEPHI)	<ul style="list-style-type: none"> - Registering into ASEPHI system - Entering the profile of his business (only once and can be repaired) - Registering their batik products to get the "Batik Pekalongan" label by entering some information such as batik type (<i>tulis</i> or <i>Cap</i> or <i>combination</i>), product form (shirt or skirt or other), pattern / motif, photo - Following up customer complaints
4	Batik Customers	<ul style="list-style-type: none"> - Accessing some information of batik authenticity (type, form, pattern / motif, photos and profile of batik producers) and through the photos, customers can check manually - Being able to complain if the product he bought is disappointing

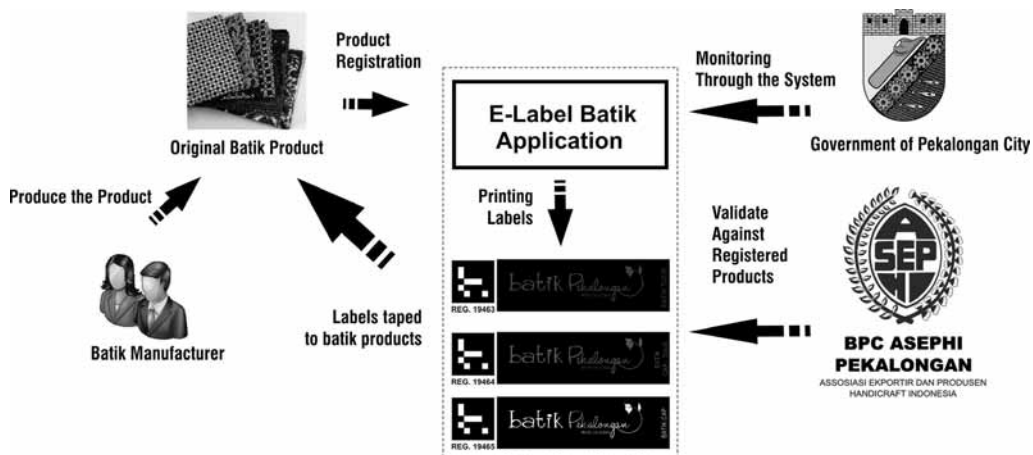


Figure 3. 1 Business Flow for Batik Producers

Figure 3.1 explains the business flow of batik producers to get the unique “Batik Pekalongan” label (enables different register numbers). Then, they must register the original batik products to the application of e-Label Batik. After the registration process is completed, they can print “Batik Pekalongan” label in accordance with the provisions of regulation and it can be stick on the original batik products. The label will be useful (providing information to the users through the marker) after ASEPHI validates it. This procedure is supervised by Pekalongan City government.

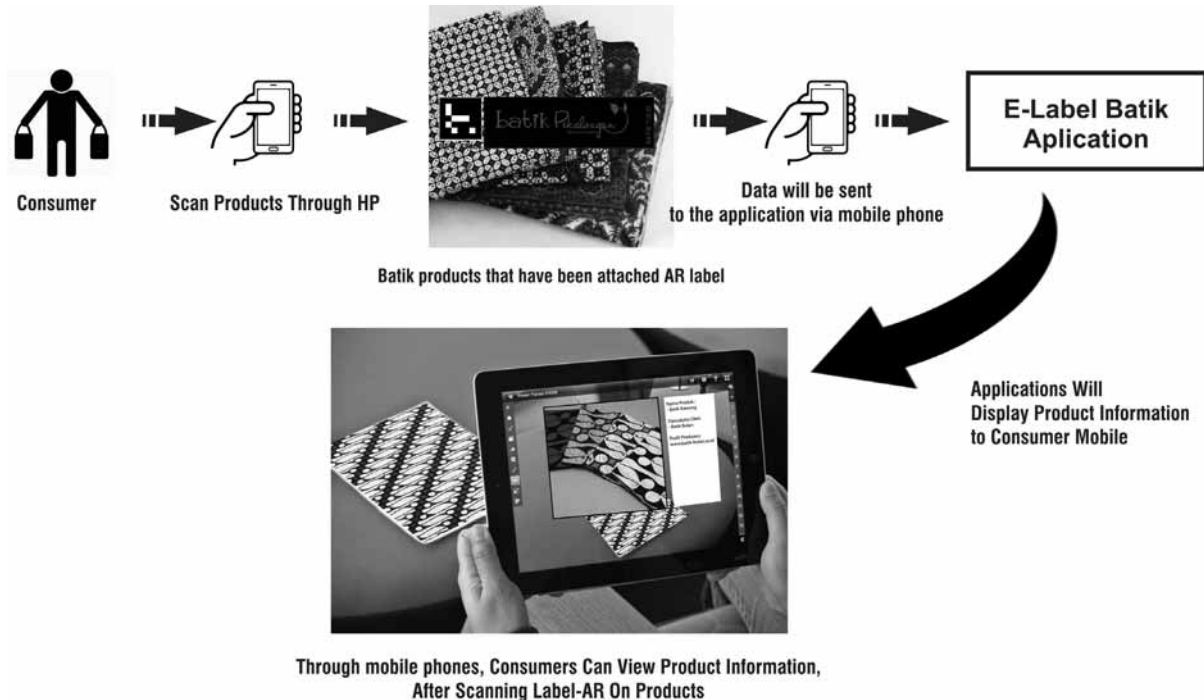


Figure 3. 2 Business Flow of Batik Customer

Figure 3.2 describes the business flow of batik customer. It can be seen that customers can check the authenticity of batik by scanning marker on the “Batik Pekalongan” label using their smart phones and it will automatically display information of batik type, product form, pattern / motif, photo and producers’ profile. Through the available access, customers can deliver their complain about batik products they buy if they feel dissatisfied.

3. Conclusion

- Application of e-Label Batik is a synergistic application which appropriate with Regional Regulation No. 6 of 2014 Pekalongan City about the use of Pekalongan batik label. Therefore, it requires big support from Pekalongan City Government and Pekalongan ASEPHI.
- Beside providing convenience for the City Government of Pekalongan to supervise the sticking of “Batik Pekalongan” label, the application requires the role of ASEPHI to oversee the use of the labels through validation as well.
- Because of validating each label used by batik producers (Pekalongan ASEPHI) and providing information to perform manual checks on the products, “Batik Pekalongan” label becomes a tool to identify the authenticity of a batik product.

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