Implementation of Design Thinking Process in creating New Batik Lasem Design

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ABSTRACT
This paper discusses the innovative new batik Lasem design. Before the writers were able to create the new design, they implemented a creative process called the design thinking process which was developed by IDEO design and Riverdale Country School New York. The framework of the design thinking process involves five steps of research: analysis, ideation, experimentation, and implementation. The town of Lasem and batik Lasem is chosen because the town is the producer of a particular batik in Indonesia that is influenced by Chinese culture. However, the younger generation appears to have no interest in creating new batik Lasem designs to promote and preserve the Lasem culture.

Keywords: Innovation, design thinking, batik; Lasem, Indonesia

BACKGROUND
Innovation, according to Oxford Advanced Learner’s Dictionary is (1) the introduction of new things, ideas or ways of doing something; or (2) a new idea, a way of doing something that has been introduced or discovered (Hornby, 2010). These definitions refer to innovation as a finished product, new idea and new method. Innovation does not mean creating something new; it is re-thinking of old ideas, tweaking it, looking at it from different angles until you finally discover that there are more potentials that can be drawn from these old, tired ideas. There is a process involved in any innovation.

This paper describes an implementation of Design Thinking process as developed by IDEO and Riverdale Country School in New York, and is discussed in Thomas Vogel’s, Breakthrough Thinking: A Guide to Creative Thinking and Idea Generation (2014).
This design thinking process is applied in the creation of an Indonesian traditional cloth: batik. The Chinese-influenced Lasem batik has newer motifs and can be found in Lasem area, Rembang, Central Java.

DESIGN THINKING PROCESS
The IDEO design and Riverdale Country School in New York developed a toolkit for design thinking called the Design Thinking for Educators which basically divides the process of finding a solution, or innovation into 5 steps: Research and discovery, Analysis and interpretation, Idea generation, Experimentation and refinement, Action plan and implementation (Vogel, 2014). Below describes each process and phase as derived from Thomas Vogel’s book:

- **Research and Discovery** is the phase where facts are compiled and analysed. In this phase, it is imperative to have an understanding of the problem to define the challenges and share knowledge.

- **Analysis and interpretation** which involves examining knowledge and information gathered during the first phase; and create meaning from the facts gathered beforehand.

- **Idea generation** is the phase where ideas are developed, refined and compared to find which is the most suitable one(s) to be used as a solution.

- **Experimentation** builds from the idea that has been developed during the previous phase, to build prototypes, as well as making the ideas tangible.

- **Action plan and implementation** or what IDEO calls the Evolution phase is where the ‘winning’ idea(s) is implemented and further developed.

This framework of design thinking process is used in this paper to describe the problems in the town of Lasem, Rembang, Central Java, well known as a producer of a type of Indonesian traditional cloth, called batik. It is influenced by the Chinese culture brought in by seafarers and merchants. The town of Lasem was chosen to be the main focus of this research because the batik industry in Lasem is facing a serious shortage of young labour force who has interest in batik Lasem and contribute to its innovations. Therefore, this paper attempts to implement the design thinking process developed by IDEO design and Riverdale Country School New York to show that innovations are possible for batik Lasem.

RESEARCHES AND DISCOVERY
Research Methodology
A field research was conducted in the town of Lasem, Rembang. The observation involved being immersed in the lives of the people in the town, especially the batik artisans. The writers made several trips to Lasem and observed several batik artisans creating Lasem batik as well as researching its history and the daily lives of the people and their local culture. In this phase, the writers discovered basic information regarding the town of Lasem. The second phase of this research
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involved studying the meaning of the existing motifs of batik Lasem, from which the story behind the motifs are derived from the socio-cultural aspects of the locals. This study of motifs was done by conducting interviews with key individuals who were regarded as the ‘elder’ in Lasem society as well as conducting literature review in order to garner more information on the motifs. The last phase of the research was the experimentation on creating new batik Lasem motifs inspired by the existing ones. The author of this paper author has experience in creating new motifs for textile and for the purposes of this paper, she will put into practice the knowledge she had gained from her previous experience in order to create an innovation in traditional motifs. In regards to the design process, the author implements the design thinking process by IDEO as mentioned in the previous section to create new motifs inspired by the existing ones.

**Discoveries from Research**

The town of Lasem, an area south of Rembang, a region in central Java, serves as a hub for one particular batik style: Batik Lasem. The batik industry in Lasem Area is one of the oldest batik production centres in Java. Its establishment is associated with the Majapahit era (1293 – 1478). The town of Lasem is considered as unique for several reasons; Lasem is a melting pot between the Javanese and Chinese culture; some studies use the term Le Petit Chinois to describe the town of Lasem. It is one of 11 Chinese settlements in the area, dating back to the era Hindu kingdoms reigned in what is now known as Indonesia.

Another noteworthy characteristic of the town of Lasem is it is fairly isolated. The town has preserved its old buildings bearing the distinctive Peranakan style architecture. The town is located in the path of De Grote Postweg or the Great Post Road that spans Anyer to Panarukan and its construction, according to history, brought many suffering to the locals as they were forced to build the road. It is also said that Lasem, used to be known as a famous route for opium smuggling into the Java (Rachman, et al., 2013), James R. Rush in his book *Opium to Java: Revenue Farming and Chinese Enterprise in Colonial Indonesia*, coined the term opium funnel to describe the town of Lasem.

The locals believe that Bi Nang Un, who was one of the vassals of the Chinese admiral from Yunnan, Cheng Ho, first created the Chinese settlement in the area now known as Lames (Aziz, 2014), together with his wife, Na Li Ni, who presumably brought the more advanced technique than what the locals were familiar with, and introduced it to them (Kwan, n.d.). Na Li Ni was believed to have taught the art of batik to teenagers in the park Banjaran Mlati, Kemandhung. The proof of the arrival of the Chinese people could be seen in one of the historical sites in Lasem where a lifeboat with two human skeletons were found. Handayani (2006) wrote that Ceng Ho himself used to regularly visit ports in the North Coast of Java.
An ancient boat in the village Punjulharjo, Rembang, Central Java Province. This boat has an important value to science, history and culture that its presence reserved RI # 5 of 1992 on Heritage Objects.

The boat, which has a length of 15 meters and width of 4.6 meters using a technology board fastening and sewn-plank and lashes - lug technique. Based on radiocarbon found on the boat, derived from centuries VII - VIII AD (660-780 AD) and the findings of the boat only in Southeast Asia the most complete and intact. (Source: Yogyakarta Archaeological Center)

The town is considered as having one of the six biggest batik industries during the Dutch colonial era, and as a place that produces the colour red essential in creating ‘batik tiga negeri’ - a type of batik that is dyed in three locations in Java (it is called ‘negeri’ or country because before the Indonesian Archipelago was formed, each kingdom was considered a country in its own right). Batik Lasem Tiga Negeri is Batik Tulis Lasem, which has a colour combination of red, blue, and Soga (brown). The red is from Lasem, the blue is from Pekalongan and the brown ‘soga’ is from Solo.
Batik Lasem, as can be seen from its name, is a type of batik manufactured in Lasem, Rembang. Batik Lasem, according to Kwan (2011), is considered as one out of the six biggest batik industries during the Dutch colonial period - the others being Surakarta, Yogyakarta, Pekalongan, Banyumas, and Cirebon. Batik Lasem is well known for its distinctive red colour called “getih pithik”. In general, the Lasem Batik motif can be divided into three (3) types, namely:

1. Motif China, the Chinese influenced motifs. For example, phoenix or phoenix (known as lok can), dragon (dragon), Kilin, partridge, golden fish, deer, bats, butterflies, turtles, snakes, shrimp, crab.

2. Motif Java, the Java-influenced motifs. For example, parang, udan riris, kawung, sekar jagad, sido mukti.

3. Motifs of flora and fauna Lasem, the motif influenced by the natural environment around Lasem. For example, kricak, latohan, gunung ringgit.

These three kinds of motifs are combined to form a distinctive motif Lasem. The Laseman motif has a very strong influence on the Indramayu batik, Jambi, Palembang, even Pekalongan, Solo and Yogy as well as the various regions in the dynamic development of motifs in batik Lasem.

ANALYSIS AND INTERPRETATION
This phase entailed analysing information and facts gathered during the field observation in the previous phase. In this phase, the writers analysed four motifs that are commonly found in batik Lasem as well as derived meaning from each of those patterns, which were influenced by social and geographical aspects of the town of Lasem. Those four motifs are: latohan, watu pecah, bledak kawista, and Gunung Ringgit.

Watu Pecah
The great post road or De Grote Postweg as it was called, is a road that spans from West Java in Anyer to East Java in Panarukan along the northern coast of Java (Marihandono, 2008). The road was built in 1808 during the reign of Herman Willem Daendels who decided on the construction of the road due to his concern of the British invasion; the availability of a road would make it much easier for the colonial armies to be stationed (“De Grote Postweg van Java”, 2013) there. During this period, many of the residents in these areas were recruited as stone-breakers, and this included Lasem. (Batik Lasem, Akulturasi Tionghoa dan Jawa, 2014). These conditions drove batik artists in Lasem to create a motif that reflected
their sympathy toward the situation as well as for their comrades struggling in pain and suffering working as stonebreakers. The motif itself is called watu pecah or sometimes called krecak or kricak.

The motifs consist of groups of circular shapes often left blank (not dyed). These shapes resemble the stones that had been broken using only traditional tools and they served as a reminder of the people’s hardships in building the road from Anyer to Panarukan during that time.

*Latohan*  Latoh (Caulerpa racemosa) is a type of seaweed or green algae from Chlorophyceae (Nuraini, 2006) that thrives in the Lasem area. The particular algae is popular locally as a food source. People in Lasem usually cook the algae in a local cuisine called urap. As Latoh seaweed is easily found in Lasem, the locals turned it into a motif called motif latoh/latohan.

*Bledak Kawista.* Kawista is a fruit tree that grows in abundance in the town of Lasem. The fruit is round in shape, and it has hardy exterior with soft, paste-like consistency in the inside. The website www.batiklasemart.com stated that Kawista plants are rare in Indonesia and thrive in dry/hot areas such as Lasem and Rembang. The locals consume the fruit by breaking it in two and coat the inside of the fruit with sugar. They would then scoop out the inside of the fruit using a spoon. They also process the fruit into drinkable syrup, a kind of carbonated drink resembling the western colas and thus, it is dubbed as Java Cola or *Kola Jawa.*
The relation and interaction between the locals and this particular fruit plant inevitably leads to a creation of batik motif that is derived from this unique plant. The motif is called *Bledak Kawista*. The shape of the motif resembles the shape and texture of Kawista fruit.

*Figure 6. Buah Kawista*

**Gunung Ringgit.** Gunung Ringgit is considered as a classic/ancient motif in Lasem as it can be found in the early development of Batik Lasem. The motif bears symbolic meaning of heaps of riches. The philosophy behind the motif is to find and build riches, although by means that are not prohibited by law. Aside from its philosophical meanings, the motif gunung ringgit is most likely influenced by the geographical conditions of the town of Lasem, being surrounded by mountains, one of them being mount Lasem.

*Figure 7. Gunung Ringgit*

**Ideation**

During this process, the writers decided to explore the many possibilities of creating new motifs for batik Lasem derived from the old ones. Writers are involved in the process of creating various sketches to develop as many ideas as possible. Below are some of the sketches made during the process.

*Figure 8. Ideation process - sketches*
Experimentation

During this process, the writers chose 5 (five) initial ideas to be developed into the final design of the new batik motifs for Lasem. These ideas are expressed in the form of sketches as follow:

Action Plan and Implementation

After going through the process of research and discovery, analysis and interpretation, ideation, and experimentation, the writers finally perfected the previously chosen ideas into a set of new patterns that are
inspired by the social and geographical aspects of the town of Lasem such as its history and the life of its people.

**Motif Latohan Combined with Watu Pecah**

The authors attempted to combine watu pecah and latohan motifs together. These were also combined with floral/vines patterns as often found in Chinese temples spread around the town of Lasem. Latohan is a typical plant that is widely available along the coast, which can be consumed; They grow abundantly in Lasem and hence, used widely as a motif.

**Motif Latohan Combined with Peranakan Style House Gates**

The Chinese Peranakan house gates is symbolic of the border between the outside world and the inside. They like to socialise with the world outside, and yet, they also place importance on privacy. These gates are one unique aspect that the authors portray through the new motif of batik Lames, combined with the typical Latohan motifs. Latohan is a typical plant that is grows abundantly along the coast and which can be used as an ointment.

**Motif Latohan Combined with Cheng Ho’s Lifeboats**

This motif is inspired by both the tale of Cheng Ho’s arrival in Lasem, as well as by the archaeological findings of one of Cheng Ho’s lifeboats stranded in Lasem. The present authors combined these motif inspirations to portray how seaweeds covered the boat while it was under the sea.

**Motif Latohan Combined with Buah Kawis**

The present authors attempted to modernise some of these patterns to appeal to a younger generation. They simplified the look of the Kawista fruit, and added more vibrant colours that are usually found in modern cloth patterns. Although the motif is modern, they instilled the spirit of traditionalism into it.
Motif Gunung Ringgit Combined with Rokok Lelet and Watu Pecah

To make patterns work is challenging. To include rokok (cigarette) lelet as a batik pattern, the authors tried several possibilities and eventually came up with a pattern composition that portrays the activity of people in accumulating worldly wealth, in which the rokok lelet becomes a part of their daily past time and as a means to relax after a hard day’s work.

Motif Latohan Combined with Rokok Lelet and Watu Pecah

This motif combines watu pecah and latohan motifs. To include rokok lelet as a batik pattern, the authors tried several possibilities and eventually came up with the one in which rokok lelet becomes a means of recreation and relaxation.

Motif Naga Dragon Cu an Kiong Temple Combined with Watu Pecah

In addition to Cu an Kiong temple’s Naga Dragon motifs, there is Watu Pecah or broken stone motif. This motif has a historical value when the then Governor General of the Netherlands, Daendels, made his way from Anyer to the Rembang and Lasem. The impact of it is deep sadness for the people of Lasem. This sadness is displayed in the form of broken stone motif.

Cu an Kiong is the oldest Chinese temple in Lasem, established to honour Thin Siang Seng Bo, or the Ocean Goddess. The front gate of the temple where a sculpture of a pair of dragons facing each other sits inspires this motif.

The dragon or liong is an acculturation of Javanese and Chinese cultures in batik Lasem. In semiotic, the dragon is a symbol of the existence of batik Lasem. Thus the existence of dragon that is visually portrayed as malignant giant snake is not dangerous. The dragon portrays the elegant beauty of Batik Lasem. The main ornament of the dragon motif shows the diversity of batik Lasem; the exotic dragon strengthens the existence of
batik Lasem. Liong in the batik Lasem philosophy can be interpreted as a reflection of glorious expectations, as well as a symbol of a spiritual trip. In Chinese tradition, the dragon is closely related to the source of the power of nature. The dragon is also personified as embodying the spirit of the holy man who cannot go to heaven. Liong/Dragon motif provides evidence of cultural assimilation or acculturation among ethnic Chinese and Javanese in Lasem. The dragon in both these cultures symbolises prosperity.

In batik, this motif denotes human’s endeavour in accumulating worldly wealth by appropriate means. The present authors were inspired to combine Gunung Ringgit motif with Latoh as a reminder that this motif originates from the town of Lasem, and at the same time to inspire their viewers to gain wealth by appropriate means.

**Figure 17. Cu A Kiong Temple at Jl. Dasun No 19 Lasem**

**Figure 18. Motif Naga Dragon Cu an Kiong Temple Combined with Watu Pecah**

**Motif Latohan Combined with Gunung Ringgit**

Gunung Ringgit is a motif that depicts worldly wealth (ringgit = money).

**Figure 19. Motif Latohan Combined with Gunung Ringgit**

**Motif Latohan Combined with Phoenix/Lok Can**

Lok Can or Burung Hong or Phoenix is a species of bird in Chinese mythology. Burung Hong is a product of the acculturation of Javanese and Chinese portrayed in batik Lasem, besides the dragon. A male and a female is called feng huan. In recent times the difference in sex is rarely shown. The Feng huan is often found paired with a male dragon. In the western world, feng huan is often associated with the phoenix.

The word Fenghuang is a Hokkien word. In ancient China, Hong, along with the dragon, are often used in wedding
decorations or by the noble families. The Chinese tradition considers the dragon and phoenix as a symbol of friendly relations between husband and wife, a form of metaphor between yin and yang. The phoenix on the other hand symbolises virtue, performance and permanence. For the believers, batik Lasem Lok can help motivate someone to be benevolent and contribute to his or her personal achievement.

Motif Latohan Combined with Phoenix/Lok Can

Motif Latohan Combined with Ceplok Melati as Isen Combines with Peacock

The peacock and flower motifs have Chinese influence. Peacocks are among the three species of birds in the genus Pavo and Afropavo and the partridge (pheasant), Phasianidae. The peacock spreads its beautiful feathers at his tail to attract the peahen. In Chinese mythology, the peacock is a symbol of pride and arrogance. The flower Ceplok Melati as a background motif symbolises the hope of salvation. In the traditional community life at Lasem, hope of salvation, happiness and health are very important. Safety, happiness and health are basic things in life that relate to the balance and harmony of nature.

Motif Bunga Seroeni Combined with Watu Pecah and Ceplok Melati as Isen

Bunga Seroeni/Seruni or chrysanthemum, a flowering plant, is often planted as an ornamental plant. These flowering plants first made their appearance in the Cretaceous era. Bunga Seroeni motif is also the acculturation Java and Chinese seen in batik Lasem, in addition to the dragon and burung hong. Watu Pecah motifs have a historical value. When the then Governor General of the Netherlands, Daendels, made his way from Anyer to Rembang and Java it caused deep sorrow for the people of Lasem. Grief is shown in the form of crushed stone motif. The flower Ceplok Melati as a motif background relates to the hope of salvation. In the traditional community life at Lasem, hope of salvation, happiness and health are very important. Safety, happiness and health are basic things in life that relate to the balance and harmony of nature.
Figure 22. Motif Bunge Seroeni Combined with Watu Pecah and Ceplok Melati

Motif Buah Kawis/Bledak Kawista
Kawista bledak motif relates to the Kawista tree that thrives in the area of Rembang and Lasem. The Kawista fruit is made into beverage and food. The Kawista flavoured drink known as Java Cola syrup tastes like cola and considered very refreshing.

Figure 23. Motif Buah Kawis/Bledak Kawista

Motif Acak Gunung Ringgit
Mount Ringgit means wealth, money or property that is abundant or piled up and a reflection of the desire to be rich or have a big fortune. One is encouraged to accumulate wealth and property without violating the law and the money should be used for the good of all the people.

Figure 24. Motif Acak Gunung Ringgit

Motif Latohan with Butterflies
The butterfly motif is a symbol of wisdom and hope for human life. The Chinese interpret the butterfly as a symbol of an eternal love between a husband and wife. The story of two lovers who loved each other till death in the legend Sampek Engtai or Shanbo Yintai is represented by the butterfly motif. The Lasem batik with butterfly motifs is also a source of inspiration that is able to motivate people to live a more meaningful life. Metamorphosis is the way butterflies teach wisdom and authenticity of life. The life of a butterfly life begins from an egg and its metamorphosis form caterpillar to chrysalis is a reflection of helplessness, growth, contemplation which ends in its transformation to a beautiful butterfly which is beneficial to the environment and mirrors the authenticity of human life.

Figure 25. Motif Latohan with Butterflies
Motif Buketan/Bouquet

This bouquet motif has been used from time immemorial by the Dutch colonisers to approach people by providing flower arrangements / bouquet. Buketan motif is a flower arrangement motif. The Buketan word comes from the Dutch language and French is “bouquet” that means flower arrangements. In addition to flowers, this motif can also be a plant or a bird. Motif buketan can be seen in the coastal batik because the flowers are grown in the coastal areas of Java and the flowers are bright and flashy. Buketan motif is very suitable for use in clothing as it motives can add an aura to a women’s beauty.

Watu Pecah motifs have a historical value. In ancient times, when the Governor General of the Netherlands, Daendels, made his way from Anyer to Rembang and Java it created a deep sorrow for the people of Lasem. Grief is shown in the form of crushed stone motif.

Motif Latohan Combined with Butterflies

Philosophical Lasem batik motif butterflies perceived as a symbol of wisdom and hope for the formation of human life. The Chinese interpret the butterfly, as a symbol of the love of husband and wife is eternal. The love story of two lovers to death in legend Sampek Engtai or Shanbo Yintai into visualization interpretation philosophical meaning Lasem batik butterfly motif. Lasem batik motif butterflies are also a source of inspiration that is able to motivate people to live more meaningful. Metamorphosis is the way butterflies teach wisdom and authenticity of life. Butterfly life begins from the egg; caterpillar to chrysalis is a reflection of helplessness, growth, contemplation and ends on the implementation of the beauty to be more beneficial for the environment, a mirror for the authenticity of human life.

Latohan is a typical plant that is widely available around the coast, which can be eaten as an ointment. Because there are many in Lasem, then this motif is used as the motif.
Motif Latohan Combined with Koi Fish

Koi fish motif is also the acculturation of Javanese and Chinese in batik Lasem, in addition to the dragon, burung hong and bunga seroeni. In Chinese, Koi fish became a sort of symbol of love and friendship. This is because the koi are homophones that also mean affection or love. The Koi fish is a type of fish that includes carp (Cyprinus carpio), which has very beautiful ornaments and tame. Koi are a symbol of beauty and luck inside the home and outside the home. Latohan is a typical plant that is widely available around the coast, which can be eaten as an ointment. There are many Latohan plants in Lasem and hence it has become a popular motif.

Motif Latohan Combined with Ikan Koi

Ikan Koi/Koi fish motif is also a product of Javanese and Chinese acculturation seen in batik Lasem (besides the dragon, burung hong and bunga seroeni). Among the Chinese, Koi fish has become a sort of symbol of love and friendship. This is because the koi are homophones for another word that also means affection or love. The Koi fish is a kind of fish that includes carp (Cyprinus carpio), which has very beautiful ornaments and tame. The Koi fish are usually kept as a symbol of beauty and to bring luck inside the home and outside the home (the koi pond or water garden because koi fish is believed to bring good luck). Because the koi fish is very close related to goldfish in Indonesia, many people call fish koi carp.

Motif Latohan Combined with Bunga Seroeni

Bunga Seroeni/Seruni or chrysanthemums is a flowering plant that is often planted as an ornamental lawn or for its flowers. These flowering plants appeared in the Cretaceous era. Bunga Seroeni motif is also the acculturation of Java and Chinese in batik Lasem, in addition to the dragon and burung hong.
Motif Latohan Combined with Phoenix/Lok Can

Lok Can, Burung Hong, Phoenix is a species of bird in Chinese mythology. Burung Hong is also the acculturation Java and Chinese in batik Lasem, besides the dragon. A male and a female is called feng huang. In recent times the difference of sex is rarely used. Feng huang often found paired with a male dragon connotation. In the western world, feng huang often associated with phoenix. Among Chinese-Indonesian, Feng huang itself is usually known as the Hokkien dialect, Hong. At the time of ancient China, Hong often found on wedding decorations or noble family along with the dragon. This is due to the Chinese tradition by considering the dragon and phoenix as a symbol of friendly relations between husband and wife in a form of metaphor between yin and yang. Phoenix symbolises virtue, performance and permanence. For those who are believer, using batik Lasem Lok Can can help motivate someone to be benevolent and personal achievement.

Through the process of implementing the design thinking process developed by IDEO design and Riverdale Country School in New York, the writers found that social and geographical aspects of the town of Lasem could be a source of inspiration in order to create a new product, in this case, a new pattern of batik, combined as well as derived from the old, traditional pattern. The social and geographical aspects of the town of Lasem inspire the motif.

REFERENCES


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