The Role of Usability Factors On Indonesia’s Internet Banking Customer Satisfaction

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Abstract: The main idea to do the research came from media reports that said that Indonesians are still considering complicated menu of their Internet banking as the preventing factor for them to be engaged in this technology. Several previous guideline and standards of usability had been reviewed by the authors and synthesized to generate a new framework which was tested to Indonesia’s current Internet banking customer. Based on the finding; learnability, operability, efficiency, and understandability positively influence the effectiveness on an interaction which has a significant correlation to the satisfaction. The authors expect that the resulted framework can be utilized for further improvement on usability or interaction on Indonesia’s Internet banking system.

Keywords: E-Commerce, E-Banking, Usability guideline, Usability framework.

1. Research background

To date, the most preferred reason to implement an e-procurement is automating business processes. Almost every industry aware that by embracing IT they will be able to generate a more efficient yet effective business processes. Of course, as a leader in terms of technology, banking industry also had implemented several types of e-procurement. One of the revolutionary technology, which altered how banking industry works is Automated Teller Machine (ATM). Yet hitherto, the automation has reached more advance level. Internet banking, as one of the most prominent forms of e-procurement that enables users to be engaged in many types of transactions. Such as transferring their money, checking their accounts, pay bills, and a lot more facilities through the website.

On the other hand, the 4th most populated country in the world: Indonesia has a very low Internet banking penetration. In 2010 there were only 7 percent of Indonesia’s Internet users had actually done online banking (Kapron, 2013). From 32 percent of surveyed bank customers in Jakarta; 54 percent of them were reluctant to use Internet Banking due to its’ complicated menu, followed by another 22 percent which said that registration is complicated. Where in more developed country such as Greece security is the main preventing factor for users to be engaged in Internet banking (Angelakoupus & Mihiotis, 2011). Because of those interesting facts, we decided to conduct a research in this domain; particularly in how the usability of Indonesia’s Internet banking system actually affects satisfaction. Both perspectives: users as customers and bank as the owner of system will be taken into consideration. Furthermore, we strive to find the reasons why users found that the Internet banking system is complicated to use; together with bank’s perspective, to find out whether they have emphasized on usability or follow a specific standard or guideline in deploying their Internet Banking system.

2. Literature Review

Bank Mandiri is leading the table in terms of assets; it has 789.14 trillion rupiah followed by BRI by 705.29 trillion rupiah. The second and third position is owned by BCA and BNI. Those four most prominent banks in assets apparently also prominent in terms of Internet banking penetration, which make them selected as the sample of the research in this study. Alongside with bank Mega that even though it did not make it in the top 10 in terms of assets, they managed to reach the 5th position in terms of Internet banking market share (kompas.com 2014).
Indonesia is an archipelago country in South East Asia, which is posited as the fourth most populated country in the world with 260 million people living. The potential of internet banking to grow is vast, based on the number of the population, but still in current situation some issues are emerging. In 2013, the penetration of the Internet itself is fairly low, in urban area; only 24.23% of people have direct access to the internet. On the other hand, related to Internet banking, only 7 percent of bank users admitted to using internet banking, yet 49% of customers are actually attracted to use internet banking but nevertheless complicated menus prevented them from using it. The perceived complication of the menu is actually quite surprising, since the majority of users came from at least senior high school levels of education (Asian Banking & Finance, 2012).

From an infrastructure perspective, the penetration of Internet technology to the people in Indonesia could not be considered high. But still the growth of infrastructure is exponentially increasing. The penetration of the Internet in Indonesia in terms of Infrastructure was only less than one percent back then in 2000, and significantly grown to 28 percent in 2015 (Poetranto 2014). Thus, the opportunity is born from exponential growth of the infrastructures must be accompanied by a proper usability experience for its users.

3. Current Standards and Frameworks in Usability:

International standards organization (ISO) generated one standard solely focusing on usability, ISO 9241.151 (2008). They established the measurements of usability which can be divided into effectiveness, efficiency, and satisfaction.

The standard states those three categories can be further measured by several more specific factors. Effectiveness can be achieved through the level of accuracy and completeness of one’s interaction. On the other hand efficiency can be further measured by resources employed in completing one particular task, whether it is time, cleric, or financial effort. Whereas satisfaction is rather subjective and comes exclusively from users’ point of view, comfortability and acceptance are the measures. Thus, it is a must for developer to involve the users in the development of a system which involves usability.

Usability is mentioned again in ISO 9126-1 (2000) which actually covers the standard of software quality. In this, Usability is further observed by four specific attributes. Those attributes, namely: Understandability, Learnability, Operability and Attractiveness. Not only usability, this ISO standard also covers functionality, reliability, efficiency, maintainability and portability. It is believed to be adopted more in Japan, whereas the 9241-11 is more favorable in the European Union. (Karwowski, Waldemar and Marras 2003) Other frameworks which were considered as a foundation in this research are: WebQual 4.0 (Barnes, Liu, and Vidgen, 2001; www.webqual.co.uk) and the LUCID framework (Kreitzberg, 2008).

Discussion:

Does Usability effect Customers’ Satisfaction?

We would like to discuss the concept of customers’ satisfaction itself. Parker and Matthews divided it into two paradigms: process and outcome. Customer satisfaction as a process can be simply understood by comparing what received by customers and what they expected, whereas customer satisfaction as a process emphasized more in the nature of it, not the cause. Customer satisfaction is a consequent result of “things not going wrong”. Hence the interaction in Internet banking, which able to prevent customers doing things wrong deserves vigilance (Mostaghel 2015)

Since internet banking is one part of e-commerce, then the researchers conducted in different form of e-commerce are worth comparing. Eid (2011) stated that interaction plays a very important role in delivering customers’ satisfaction in his finding. This fact is reinforced by Casalo, Flavian and Guinalin (2008) where they found that the decency usability has a direct relation to customers’ satisfaction in the context of the
website and suggested that usability testing is important for managerial perspective.

Thus, based on several previous research (Casalo, Flavian & Guinaliu, 2008; Zollet & Back, 2010; Eid, 2011; Liebana-Cabanillas, Munoz-Leiva and Rejon-Guardia, 2013) it can be concluded that usability play a major role in customers’ satisfaction. Those facts are the foundation of this research, but still those literatures did not explain how does usability or interaction resulting customer satisfaction, that gap will be further observed in the research proposed.

4. Research Questions:

Formulated by the previous literatures and current complexity faced by Indonesia, the authors came up with these questions: Why did the Indonesians perceive the complexity of interaction in their Internet banking system? What are the supporting attributes of usability that generate Indonesia’s Internet banking customer satisfaction? How do Indonesian banks follow the usability guidelines in the deployment of their Internet banking? At the end of the study, all the questions will be revisited to ensure that the research is run in correct picture.

5. Research Methodology:

This particular research is divided into two phases to gather a more holistic point of view both from the users and the owners of the system. A more specific explanation in regards to the methodology will be presented below.

The first phase was a customer survey done in Jakarta on April 2015. The fact that the respondents’ used internet banking was established before giving out the questionnaires. Fifty sample questionnaires were given randomly to bank account holders with mixed profiles (age, gender, computer literacy) who had used internet banking before from the five most prominent banks in Indonesia. 75 percent rate of response was obtained.

The second phase is designed to find out whether the owner of systems embraces a specific framework or guideline in terms of deploying their system, also to scrutinize the awareness of them in the problems of usability which faced by the users in the current situation.

6. Proposed variables of framework:

For the questionnaire, the authors opted to select five most prominent banks in Indonesia since the market share of other banks below it is not significant. Even the 5th rank which is bank Mega only holds 0.8 percent of market share and the difference between the rank is less than 0.2 percent, so whatever below it, is even smaller. (PwC Indonesia 2015). Thus authors selected to focus on the more significant population of Internet Banking.

Several variables were proposed which may contribute to overall effectiveness as below:

- perceived efficiency of an interaction
- perceived learnability of an interaction
- perceived understandability of an interaction
- the ability of users to fix errors of an interaction
- perceived operability of an interaction
- perceived aesthetic of an interface
- perceived brand image of the owner

The dependent variables are (effectiveness) and (satisfaction). We believed that both of them are complex yet essential attributes of usability; the complexity of this component is formed by several supporting variables surrounding the effectiveness. The survey aimed to prove the relationship specifically in the area of study, which is Indonesia. The significance of the relationships will be proven through a systematic statistical process. Effectiveness was a main component of usability (Barnes & Vidgen, 2002) even it was considered as a result of several supporting variables in LUCID framework (Kreitzberg, 2008). In usability, satisfaction was always mentioned and considered as an essential component (Casalo, Flavian, Guinaliu in 2008; Nielsen, 2012; Liebana-Cabanillas, Munoz-Leiva
and Rejon-Guardia, 2013). It is very challenging to measure the satisfaction, due to its’ nature which is subject to personal opinion of users. We perceive satisfaction as a very personal matter, if it is designed to fulfil the needs of one, the other might have a significantly different criteria to be met. Yet we see that this variable may relate to satisfaction. This is influenced by several studies in distinctive domains which supported that relationship (Lin, 2003; Milan and Praprotnik, 2008). The relationship of effectiveness and satisfaction is expected to be significant and measurable.

7. Result analysis and discussion:

Statistical analysis were used to prove the significance of the relationships among some independent variables to a dependent variable. As mentioned previously the variables were set as independent variables which are expected to affect a dependent variable, where effectiveness is expected to have a reciprocal relationship with satisfaction. Multiple regressions were used to prove the significance of relationships between effectiveness and satisfaction, where the result of multiple regressions can be seen in the table below:

<table>
<thead>
<tr>
<th>Model</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>.004</td>
</tr>
<tr>
<td>Efficiency</td>
<td>.013</td>
</tr>
<tr>
<td>Learnability</td>
<td>.000</td>
</tr>
<tr>
<td>Error_Fixing_Ability</td>
<td>.357</td>
</tr>
<tr>
<td>Operability</td>
<td>.002</td>
</tr>
<tr>
<td>Aesthetic</td>
<td>.477</td>
</tr>
<tr>
<td>Brand_Image</td>
<td>.358</td>
</tr>
</tbody>
</table>

Effectiveness is set as a dependent variable with n=99. A relationship can be considered significant if the Sig. Value is smaller to 0.05 (f (6,93) =124.840). It can be seen that several variables show the significance in relationships, but some did not. In this case; efficiency, learnability, and operability had proven significant relationships with effectiveness, whereas the remaining (aesthetic, brand image, and error fixing ability) did not. Understandability was discarded due to collinearity issues, meaning the other variables were enough to explain the relationships, and including this variable would actually lead to less accurate results. The result meant that efficiency, learnability, and operability affected the effectiveness of an interaction in a proportional manner. One can say, the effectiveness of their interaction will be improved coincided with the existence of those variables.

8. Correlation: Effectiveness and Satisfaction

From the proposed framework, the effectiveness and satisfaction have a two way relationship. One can say that if the effectiveness is high; consequently the satisfaction of that interaction will also be high. Other way around, the higher level of satisfaction means that user perceived high level of effectiveness. To examine a reciprocal relationship between them, the result of correlation test taken in this research is explained below:

With N=100, effectiveness and satisfaction were proven to have a strong relationship in between them. One relationship can be considered to have a strong relationship where the Pearson correlation value is greater than 0.7 to 1. Also, the table showed that the relationship is proportional through positive value of Pearson correlation; meaning, the greater effectiveness perceived, the greater satisfaction is. Additionally, the sig (2-tailed) further supported the findings; where it was lesser than 0.05, one can conclude that those two variables have a statistically significant correlation. It means that the increase or reduction of value in one variable will significantly affect the other in a proportional manner. Thus, based on the result of analysis, the framework below is generated.
Based on the interview done with one of the developers of the Internet Banking system, BRI first outsourced their Internet Banking system in 2009. But since 2012 until now, that particular system is handled by the (TIS) Division of that bank. The number of users of Internet Banking; according to him, is 2 million of people. He did not know the exact penetration in terms of Internet banking users and customers. Yet, according to the Director of Consumer Affairs there were 52 million of BRI customers at the end of 2014. So based on authors’ calculation, the penetration of Internet banking users to the whole customers is approximately 3.84 percent.

According to the respondent there was no demographic analysis in the users of Internet banking. Thus, the demographical matters of users were not taken into consideration of Internet banking improvement. There was no systematic feedback system such as survey from users. This bank is still relying from one way customer feedback from their customer service department. Respondent asserted that functionality is still the main driver of the development, which will be followed by the UI. In terms of human computer interaction, they utilize benchmarking methods in the development of their system. Respondent also mentioned that the development of UI was relied on the methodologies or theories learned by the development team in their university without any specific framework, guideline, or standard. At the near end of the interview, he stated that their Internet banking system conforms to ISO 8583-3 (2003). ISO 8583 is a standard of financial transaction card originated messages, which is related to the interaction but not usability.

Respondent asserted that he believed those approaches are able to improve the quality of interaction. Respondent also mentioned that there is no error tracking system, but subsequently remembered to the log of errors which is noted by the system and agreed that the log can be used for further improvement.

Respondent had just heard at that time of the report which stated from 32 percent of Customers surveyed, 54 percent of users were confused by the menu of Internet banking systems (Asian Banking & Finance, 2012) and also asserted that the bank was also not aware of that fact. When respondent was questioned the preventing reasons of Indonesia’s bank customers to Internet banking, he mentioned that the users may be not mobile enough to feel that Internet banking necessary. On the other hand, respondent said that they are confused or afraid to embrace internet banking, which is similar to the foundation of this research. Respondent sees no problem with the infrastructure, even though based on Poetranto, (2014) the penetration of people to Internet in Indonesia is still lower than 30 percent.

Questioned on the finding obtained in the survey phase of this research, respondent agreed that learnability, operability, understandability, and efficiency will increase the effectiveness of an interaction, and furthermore the effectiveness will increase the satisfaction of the customer. He mentioned that learnability can be embraced by providing step by step demo of interaction or a manual. From the respondent’s point of view, socialization is needed to increase the penetration of Internet banking users to customers. He mentioned that in terms of Interface, Indonesia’s Internet banking system is comparable to the world’s prominent bank, but not the features.
9. Discussion:

Apparently this particular bank did not follow the International standard of Usability, from ISO or the others such as LUCID framework. Furthermore, they provide no proactive feedback system which may be helpful in eradicating the confusion of users; instead they still rely on the “push” system of customer service which may be not effective enough to gather the feedbacks. From the authors’ perspective, this is related to the complexity perceived by users. Since not everyone wants to convey their complaints to the customer service, some of them might just leave the system. They also did not consider the demographic data of users in the design and development phase of the system.

Respondent emphasized socialization as the solution of this case. Yet, from the authors’ perspective, they perceived interaction and interface solely as the supplement of functionality, the effort of usability has to be improved for further improvement. For a system which entertains two millions of users, the authors’ argue that the embracement of standards, guidelines, or frameworks is essential. Additionally, the result of this research can also be a consideration for the banks in Indonesia for future improvement of interaction and usability.

10. Summary and Implication

The authors agreed that learnability, operability, efficiency, and understandability are the variables that influence effectiveness in this domain. Also, the authors assert agreement in the reciprocal relationship of effectiveness and satisfaction which was proposed in the framework. Thus, to clearly describe that all of the research questions were answered by this research, those questions will be revisited:

Apparently, the prominent bank did not follow any specific usability framework in the deployment of their Internet banking system. This is most probably related to the complexity perceived by the users. They also consider that Usability is also a supplement to Internet banking functionality. From the authors’ perspective, their lack of concern in usability generated perplexities which consequently prevent users to be engaged in the system. Whereas the studies done before have already mentioned that usability is very important in the deployment of that kind of system.

Based on the questionnaire data gathered in this research, the resulted framework listed operability, understandability, learnability, and efficiency as the supporting variables which generate effectiveness and consequently forms satisfaction of users. It had also been inquired to the practitioners’ that apparently agreed to the framework. Even though the relationships of them were just formed in this research, but the existence of them were already mentioned in the past. Efficiency was supported by studies of (Kreitzberg, 2008; Joo, 2010; Nielsen, 2012; Hung, Tsang & Liu 2013); understandability by: (Barnes, Liu, & Vidgen, 2002; Nielsen, 2012), learnability by (Barnes, Liu, & Vidgen, 2002; Kreitzberg, 2008; Reed & Monk, 2010; Nielsen, 2012) and operability by (Barnes, Liu & Vidgen, 2002). The relationship of effectiveness and satisfaction was also discovered from the past, but in a different context and the domain of researches. The reciprocal relationship between them was influenced from fairly different domains of research by (Lin, 2003; Milan and Praprotnik, 2008).

As mentioned previously in the re-visitation of RQ1, apparently the sample of bank only relied on the knowledge obtained from its developers and programmers in the college or university and the experience of them without following any specific guideline, framework, or standards. The sample bank has only followed ISO 8583 which is related to financial transaction message, but not usability or interaction. This is not ideal for an enormous system which entertains about 2 million users; moreover this strategic e-procurement involves the customers directly in the interaction. Thus, for the future improvement, the framework resulted from this research may be utilized both to increase customer satisfaction of interaction, and to eradicate the complexity faced by the customers.
The authors strongly suggest this to be done by the practitioners.

11. Limitation

The authors are aware that several limitations were already predicted in the proposal and faced in the conduct of this research.

The first limitation is related to the sample of quantitative data gathering. Apparently, it was challenging to find people from more mature age group who is engaged in Internet banking system in Indonesia, it may relate to APJII data in 2012 which said that the users of the Internet in Indonesia are peaking in the range of 16-34 years old.

The second limitation is to gain access to do the Interview from the bank’s side. The interview is still expected to generate a more in-depth understanding of bank’s perspective in this domain.

12. Recommendation

As a result, several recommendations are proposed, as the authors’ has engaged in an in-depth independent research of the role of usability factors on Indonesia’s Internet banking customer satisfaction. The recommendations are in particular:

1. The target population might be expanded in future research. The target population was narrowed into five most prominent banks in Indonesia, for future improvement, this can be expanded. In so doing, the result is expected to be more precise and the sampling error rate might be lower.

2. The banks in Indonesia need to underpin usability of their Internet banking implementation. It is surprising that even the one of the most prominent banks did not follow any standards in terms of usability for their Internet banking. For a system that entertains two million users and considered strategic, the urgency to develop a proper usability is demanded. Moreover, Internet banking system directly interacts with users from distinctive education and expertise. From the authors’ perspective the improvement of sophistication in Indonesia’s Internet banking system will not help them to increase the penetration of users to customers. To build a more usable system is the urgency for this time frame.

3. The framework resulted can be followed by practitioners to eradicate the complexity faced and increase customer satisfaction. This framework is should be tested directly to the Indonesian users. Thus, since the bank at this time did not follow any standards or framework for the usability of their Internet banking. They may choose to follow this framework. It is expected that the implementation of this framework may improve the quality by reducing the complexity faced by users and increase their satisfaction.
REFERENCES


