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FEASIBILITY ANALYSIS OF REINSURANCE WEBSITE USING THE HEURISTIC EVALUATION METHOD

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Abstract: PT. Energi Mandiri Internasional was established on November 22, 2011 as a reinsurance broker consultant and risk management consultancy to ensure the financial stability of reinsurance service users. The company's website; energyre-int.com as a place to self advertise the company with an electronic mail feature to answer questions from potential clients. Heuristic evaluation method was used to test the feasibility of the user interface and analyze the appearance of the interface from the energyre-int.com website. This test was conducted using questionnaires with 34 respondents of reinsurance consulting services users. The results obtained from testing on the Severity rating scale and using the Eight Golden Rules are recommendations for improvement on aspects that have a value of 1 which means that there are errors but can be ignored; Help and documentation with a value of 0.99, the Error Prevention aspect with a value of 0.98, and the Match between system and the real world aspect with a value of 0.91.

Keywords: Heuristic Evaluation; Feasibility Analysis; Reinsurance; User interface; Recommendation.

Abstrak: PT. Energi Mandiri Internasional didirikan pada 22 November 2011 sebagai pialang dan konsultan reasuransi dan konsultasi manajemen risiko untuk memastikan stabilitas keuangan dari pengguna jasa reasuransi. *Website* perusahaan tersebut; energyre-int.com sebagai wadah untuk mengiklankan perusahaan dengan fitur surat elektronik untuk menjawab pertanyaan-pertanyaan calon klien. *Heuristic evaluation* merupakan metode yang digunakan untuk menguji kelayakan *user interface* dan menganalisis tampilan antar muka dari *website* energyre-int.com. Pengujian ini dilakukan menggunakan kuesioner dengan 34 responden pengguna jasa konsultasi reasuransi. Hasil yang didapat dari pengujian dalam skala *Severity rating* dan menggunakan aturan *Eight Golden Rules* adalah rekomendasi perbaikan pada aspek yang memiliki nilai 1 artinya ada kesalahan tapi bisa diabaikan; *Help and documentation* dengan nilai 0,99, aspek *Error Prevention* dengan nilai 0,98, dan aspek *Match between system and the real world* dengan nilai 0,91.

Kata kunci: Evaluasi Heuristik; Analisis Kelayakan; Reasuransi; Antarmuka Pengguna; Rekomendasi.

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INTRODUCTION

PT. Energi Mandiri Internasional is an insurance brokerage service provider company founded on November 22, 2011 as a reinsurance broker and risk management consultant to ensure the financial stability of reinsurance service users [1]. PT. Energi Mandiri Internasional already has a website called energyre-int.com and wants to improve their website by inviting more clients and updating the appearance to improve the content on the company's website.

Website design quality and functionality analysis is much needed to evaluate the appearance of the website interface so that it fits to the user's needs [2]. In addition, the design quality and functionality analysis provides a satisfactional value from website user and recommends for improvements based on website user's feedback [3].

One of the methods for analyzing the quality of the website's application design and functionality is Heuristic Evaluation method by applying 10 aspects of heuristic principles developed by Jakob and Nielsen [4]. Using the Severity Rating is useful in making recommendations for improvement using the Eight Golden Rules based of the analysis results from the Heuristic Evaluation to measure the website's feasibility design [5]. For measuring the feasibility design of the website using Severity Rating in making recommendations and improvements for the analysis results based of the Heuristic Evaluation, it required multiple researches prior to the related heuristic evaluation to become a supporting guide for the research objectives[6]. The result of this analysis is the values of several elements that have a highest Severity Rating numbers will be corrected depending on how severe the problem is with these affected elements [6].

From the prior research "Analisis User interface terhadap Website Berbasis E-Learning dengan Metode Heuristic Evaluation" The paper is discussing about the analysis in the Netacad system, it fully discussed about the 10 aspects of the Heuristic Evaluation principle [7]. Other research "Analisis Usability Aplikasi iBadung Menggunakan Heuristic Evaluation Method" is discussing about the Heuristic Evaluation analysis on the iBadung application website using the 10 principles and Severity Rating as well as recommendations with Eight Golden Rules by Ben Sheiderman and Chaterine Plaisant [5].

Based on the prior research, this research will conduct an analysis of the user interface of the energyre-int.com website using the Heuristic Evaluation method to evaluate and provide recommendations using the Eight Golden Rules by Ben Sheiderman and Chaterine Plaisant to improve the quality and appearance of the website.

METHOD

The first step on the research is planning the research in accordance with the research object, namely with literature study and determine the research object in the form of a website from PT. Energi Mandiri Internasional, then determine the research method to analyze the user interface of the website using Heuristic Evaluation analysis[8].

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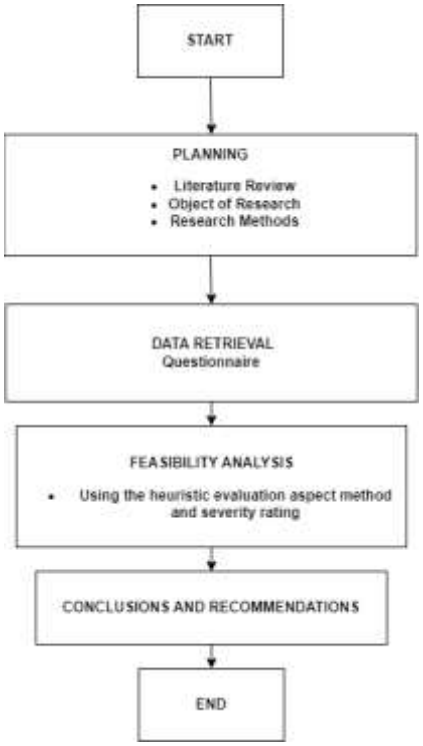

Image 1. Steps of research

After the planning is complete, data collection is carried out using a questionnaire which will be distributed to 34 respondents who are users and potential users of reinsurance[2]. After the data has been collected an analysis will be carried out using 10 Heuristic Evaluation principles to calculate the questionnaire from the respondents.

Heuristic Evaluation

Heuristic Evaluation is a method used to measure the user interface and provide an easy and effective design of the interfaces for the application or a website users[7]. According to Nielsen there are 10 points in the Heuristic Evaluation principle [9].

Table 1. Heuristic Evaluation Aspects

Principles	Explanation
Visibility of System Status	Visibility of system operation with user-friendly status.
Match between system and Real world	System compatibility with the real world
User Control and Freedom	Users have freedom in using the website feature
Consistency and Standard	Consistency in the use of standard website components
Error Prevention	The system can prevent errors
Recognition rather than recall	Assist users in solving error problems on the website
Flexibility and Efficiency of use	Making users convenience, flexible and efficient when using the website
Help users recognize, Diagnose, and Recover from errors	Provide assistance to users if there are any errors in the system or website interfaces
Aesthetic and Minimalist Design	Provides an aesthetic appearance and a design that fits the user needs
Help and Documentation	Have a complete system documentation

In the first equation (1), ∑Hx is a number of ratings from the Heuristic Evaluation principle sub-aspect (A1, A2, A3 , dst…), X is a point from the Heuristic Evaluation aspect which has a value of 1/0 (Yes, No). (1).

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$$\sum Hx = (0 * A1) + (1 * A3) + (2 * A3) + (3 * A4) + \ldots \quad (1)$$

Severity Rating

Severity Rating is the value that represent the usability problems found based on their severity, they have to be repaired first before their being used [10]. For the Severity Rating on the heuristic scale test result is carried out by rating the heuristic evaluation test results into the Severity Rating scales [11].

Table 2. Severity Rating Point

Point	Explanation
0	Requires no repair
1	There are few errors but they can be ignored
2	There are few errors, low repair priority
3	There are few errors, medium repair priority
4	Very severe error problem, high repair priority

On the equation (2), S is the result of the Severity Rating in one aspect, ∑Hx is the results of the Heuristic Evaluation rating sub aspect, n is the number of sub aspects in each aspect.

$$S = \sum Hx / n \quad (2)$$

Eight Golden Rules

The Eight Golden Rules are a rule for determining recommendations based on the rules made by Ben Sheiderman and Chaterine Plaisant [5]. The results obtained from the Heuristic Analysis method and the Severity Rating have been carried out in order to obtain system recommendations that accordance with the requirements and rules of the Eight Golden Rules.

Table 3. Eight Golden Rules Point

Principles	Explenation
Strive for consistency	The interfaces consistency.
Cater to universal usability	Has a shortcut key to save time
Offer informative feedback	Has a feedback system
Design dialog to yield closure	Feedback shows the process
Prevent Errors	The system has an error handling and prevention feature
Permit easy reversal of action	Can return from the error
Support internal locus of control	The user is responsible for the system and the system is not in full control
Reduce short-term memory	System Reduce short term memory load for better performance

RESULT AND DISCUSSION

The result of the Heuristic Evaluation analysis shows that the average of the 10 heuristic aspects are calculated less than one (<1). The results of the heuristic calculations are seen in images 2.

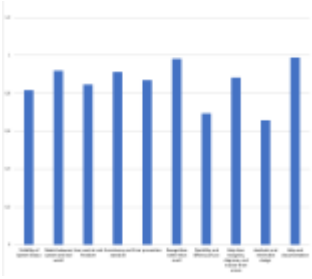

Image 2. Result of 10 heuristic aspects

After seeing the results of the Heuristic

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Evaluation, it can be seen that there are 4 aspects that can get recommendations with the highest average value Help and Documentation (0,9902), Error Prevention (0,98), Match between system and the real world (0,917), and Consistency and Standard (0,912). Furthermore, after applying the heuristic method, a rating method is carried out using the Severity Rating method by rounding the average of the Hx first.

Table 4. Severity Rounding Point

Principles	Hx Average	Sv
Visibility of System Status	0,816176471	1
Match between system and Real world	0,917647059	1
User Control and Freedom	0,84706	1
Consistency and Standard	0,911764706	1
Error Prevention	0,98	1
Recognition rather than recall	0,6941	1
Flexibility and Efficiency of use	0,8824	1
Help users recognize, Diagnose, and Recover from errors	0,870588	1
Aesthetic and Minimalist Design	0,6588	1
Help and Documentation	0,9902	1

With this result, it can be concluded that energyre-int.com which is owned by PT. Energi Mandiri Internasional has 1 point for Severity Rating, it means that there is an error on the website but does not require any repair.

Table 5. Severity Point Result

Point	Explanation
0	Requires no repair
1	There are few errors but can be ignored
2	There are few errors, low repair priority
3	There are few errors, medium repair priority
4	Very severe error problem, high repair priority

Recommendations are made based on the Eight Golden Rules which are matched to the average value of Hx that has the greatest value in the Heuristic Evaluation principles.

Tabel 6. Eight Golden Rules Recommendation

Principles	Hx Average	Eight golden rules
Match between system and Real world	0,917647059	Strive for consistency
Consistency and Standard	0,911764706	Strive for consistency
Error Prevention	0,98	Prevent Errors
Help and Documentation	0,9902	Offer informative feedback

Based on these rules a recommendation for the website improvement can be made with the heuristic principles that have the greatest value aspect. Help and Documentation, The addition of a documentation page can be one of the recommendations needed because at the time if there is an error on the website it

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will be sent and asked by e-mail and also replied from it. This recommendation is related in Eight Golden Rules aspects : Offer informative feedback

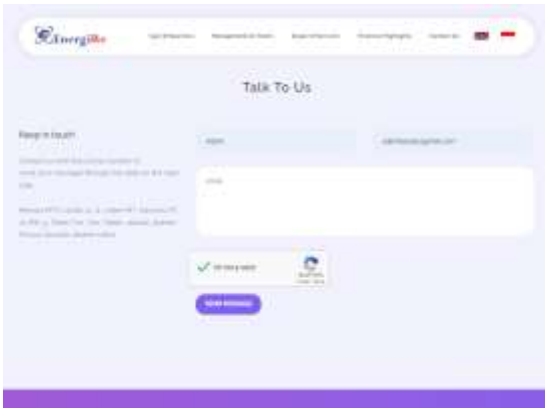

Image 3. E-mail

Error Prevention, The display of errors in sending e-mails will be very useful because the user will know whether the e-mail has been sent or not. This recommendation is related to the aspects of the Eight Golden Rules : Prevent Errors

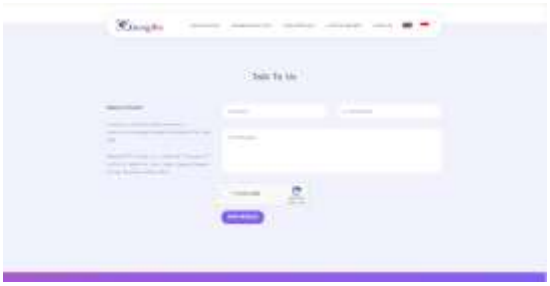

Image 4. Display Error

Match between system and the real world, The use of images, designs and colors that represent the company's business will further enhance the suitability of the website in representing the business offered by the company. These recommendations are related to the Eight Golden Rules : Strive for consistency

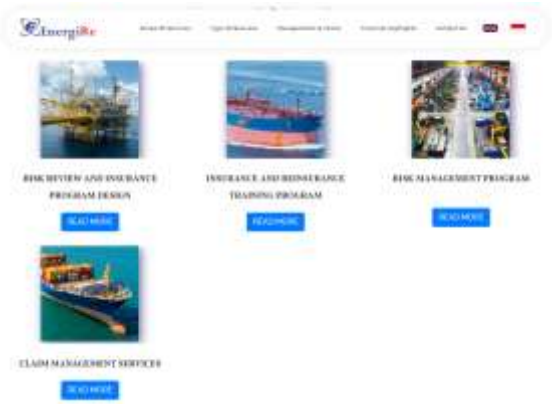

Image 5. Match Between System and The Real World

Consistency and Standard, Font and icon naming consistency on the website will represent the professionalism of a business, so these improvements are very important to achieve standards and consistency from the business sites. This recommendation is related to the aspects of the Eight Golden Rules : Strive for consistency.

Image 6. Consistency and Standard

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CONCLUSION

From the feasibility analysis process for the UI and UX improvement using Heuristic Evaluation method, the results from the analysis on the 10 aspects of the Heuristic Evaluation obtained four aspects with the highest average Severity Rating. Help and Documentation (0,9902), Error Prevention (0,98), Match between system and the real world (0,917), and Consistency and Standard (0,912) by rounding up Severity Rating worth value 1, there is an error but can be ignored. Recommendations are obtained based on the 4 aspects of Eight Golden Rules, namely the display of errors in sending e-mails will be very useful so that users will know whether the e-mail has been sent or not, the use of images, designs and colors that represent the company's business will further increase compatibility on the website in representing the business offered by the company, font consistency and icon naming on the websites are important to make any business looks professional, so this improvement is very important to achieve standards and consistency from the business sites, the final conclusion of the ui/ux design feasibility analysis using Heuristic Evaluation on energyre-int.com, The result was adequate with the rating score that has been obtained using the Severity Rating and can be improved even better by using the results of the recommendations that have been obtained.

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