

Implementation Of Heuristic Evaluation Method For Evaluation And Recommendations UI/UX Design Improvements On The Cinepolis Website

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Abstract— UI/UX is one of the most important elements of a website. One of the tasks of UI/UX is to make it easier to achieve a goal that the user wants. Cinépolis is a cinema that has been established in Indonesia since 2014. Cinépolis then launched its own website to make it easier for users to view movie information and order tickets. Based on the questionnaires that have been distributed and calculated using the System Usability Scale or SUS method, the Cinépolis website gets a score of 54.03 and is below the SUS standard of 68. The predicate obtained from the Cinépolis website is grade D with the predicate Poor. Heuristics are methods for finding interface problems to improve usability and user experience. The joint evaluation of 2 evaluators showed that there were 20 problems on the Cinépolis website based on 10 heuristic principles, while the evaluation of the Cinépolis website improvement prototype with 1 other evaluator found 5 problem findings based on 10 heuristic principles on the Figma prototype. The prototype that has been implemented gets a final score of 88.01 using the SUS calculation based on the questionnaire data that has been distributed. The final predicate obtained from the Cinépolis repair website is grade A with the predicate of Excellent.

Index Terms— Evaluation; Figma; Heuristic; SUS; UI/UX; Website.

I. BACKGROUND

Movie is one of the most widely enjoyed entertainment media by the public [1]. There are many alternative choices that we can choose to be able to enjoy a movie, one of which is by watching a movie in the cinema. Cinépolis is a cinema from Mexico that has been operating in Indonesia since 2014 [2]. To support its distribution, Cinépolis has created a website for cinemas in Indonesia with the aim that customers can see currently showing and upcoming films, and can order tickets online [2]. A good web-based application is an application that can interact well with its users [3]. Two important elements that determine this are User

Interface (UI) and User Experience (UX). A good UI will provide user convenience in seeing the appearance and understanding the functionality of the application. Meanwhile, good UX can provide ease of use of applications for users [3]. Based on daily visitor checks carried out using the <https://www.visitorsdetective.com/> website, on 3 February 2022 daily visitors to the Cinépolis website were 732 visitors, on 5 February 2022 visitors increased to 1,751 visitors and on 7 February 2022 decreased again to 1,084 visitors. Based on the drastic change in the number of visitors, the Cinépolis website was chosen as the object of this research. To find out more about the user experience when using the Cinépolis website, a form containing questions from the System Usability Scale (SUS) table was distributed which has been translated into Indonesian [4]. From a total of 31 respondents [5] and with calculations using the SUS method, the score obtained by the Cinépolis website is 54.03. So that the Cinépolis website is below the SUS standard score of 68 and is in grade D, namely the Poor category [6]. This problem can be brought to the attention of Cinépolis to re-evaluate its web appearance. Based on the advantages and disadvantages of previous research, Heuristic Evaluation is the most suitable method to be used in this study, because the Heuristic method can provide fast and accurate results in finding problems found on the website being researched.

A. Formulation of the Problem

Based on the background above, it can be formulated several problems that will be solved in this research, namely:

- 1) How is the recommendation design of the Cinépolis website using the Heuristic Evaluation method?
- 2) What is the level of user satisfaction with the Cinépolis cinema repair website using the SUS method?

B. Scope of Problem

The following are some limitations for the scope of the research to be carried out:

- 1) The website being evaluated is the Cinépolis cinema website in desktop view.
- 2) Recommend UI/UX improvements on the appearance of the next Cinépolis cinema website.
- 3) The length of time for observing the problem of the Cinépolis cinema website is within a week, from February 1, 2022 to February 7, 2022.

C. Purpose and Objectives

In accordance with the problems that have been formulated, the objectives of this research are as follows:

- 1) Designing recommendations for improving the Cinépolis cinema website using the Heuristic Evaluation method.
- 2) Measuring the level of user satisfaction with the Cinépolis cinema repair website using the SUS method.

D. Advantages of Research

The advantages of this research are:

- 1) Knowing the shortcomings and display problems of the Cinépolis website.
- 2) Provide convenience and a high impression of comfort in using the Cinépolis website for users.

I. theoretical basis

The following are theories and definitions that explain every aspect involved in this research.

A. Usability

Usability is the ability of a software to assist users in completing a task. Usability quality is defined in 5 components [12]:

- 1) Learnability
- 2) Efficiency
- 3) Memorability
- 4) Errors
- 5) Satisfaction

B. System Usability Scale (SUS)

System Usability Scale or SUS is a method to test the usability of an application by providing a table containing 10 questions to the user. The questions consist of 5 positive questions and 5 negative questions and are rated on a scale of 1 (Strongly disagree) - 5 (Strongly agree). Here are 10 SUS questions [14]:

- 1) I think that I would like to use this system.

- 2) I found the system unnecessarily complex.
- 3) I thought the system was easy to use.
- 4) I think that I would need the support of a technical person to be able to use this system.
- 5) I found the various functions in the system were well integrated.
- 6) I thought there was too much inconsistency in this system.
- 7) I would imagine that most people would learn to use this system very quickly.
- 8) I found the system very cumbersome to use.
- 9) I felt very confident using the system.
- 10) I needed to learn a lot of things before I could get going with this system.

The following are the steps for calculating

SUS:

- 1) The respondent's answer scale is reduced by 1 for each odd numbered statement (1, 3, 5, 7, 9).
- 2) Statements with even numbers (2, 4, 6, 8, 10) then 5 minus the scale of respondents' answers.
- 3) Doing the sum of the respondent's scale then multiplied by 2.5.
- 4) Summing up all respondents' scales and then averaged.

TABLE I. SUS CLASS CATEGORIES

| SUS Score | Grade | Rating |
|-----------|-------|-----------|
| >80.3 | A | Excellent |
| 68 - 80.3 | B | Good |
| 68 | C | Okay |
| 51 - 68 | D | Poor |
| <51 | E | Awful |

C. Heuristic Evaluation

Heuristic Evaluation is a method for evaluating the usability of an application in order to find usability problems contained in the interface design. Heuristic evaluation involves several evaluators to assess whether a design violates the 10 principles of usability. This evaluation aims to find deficiencies and errors in the application so that recommendations for improving the interface design can be given to increase the level of usability [15].

D. Prinsip-Prinsip Heuristik

In 1994, Jakob Nielsen and Rolf Molich developed the heuristic principles used to analyze interface design. 10 Heuristic Principles are as follows [15]:

- 1) Visibility of System Status
- 2) Match Between System and The Real World

- 3) User Control and Freedom
- 4) Consistency and Standards
- 5) Error Prevention
- 6) Recognition Rather Than Recall
- 7) Flexibility and Efficiency of Use
- 8) Aesthetic and Minimalist Design
- 9) Help User Recognize, Diagnose, and Recovers from Errors
- 10) Help and Documentation

E. Severity Ratings

Severity Ratings are numbers that indicate the severity of a usability error. The scale that Severity Ratings has is 0 - 4.

- 1) 0: *I Don't Agree* - Bukan suatu permasalahan usabilitas
- 2) 1: *Cosmetic Problem Only* - No need to repair unless there is additional time to work on the project
- 3) 2: *Minor Usability Problem* - Low priority repair
- 4) 3: *Major Usability Problem* - High priority repair
- 5) 4: *Usability Catastrophe* - Repair with the highest priority. Very important to fix.

F. Prototype

A prototype is an initial model or example that is created to test a pre-existing concept. Prototypes are usually made to conduct trials, such as to find out whether the concepts built are feasible to be implemented and used by the wider community [17].

II. ANALYSIS AND DESIGN

This research consists of 8 stages. The first and second stages are Literature Study and data collection where data from user research, journals and previous research are collected to support this research. In the third stage, the stages are divided into 3 small stages, namely evaluation stage 1, making prototypes using figma and evaluation 2. Evaluation 1 is the stage for evaluating the original Cinépolis website together with 2 evaluators. Then from the results of the recommendations for improvement in stage 1, a prototype for figma improvement is made, and at evaluation stage 2 will be re-evaluated the figma prototype that has been made by 1 evaluator. In the next stage, the figma prototype that has been made will be built in the form of a website and a second stage of user research is carried out using the SUS method. After all stages are completed, the entire research process will be documented to facilitate further research with similar topics.

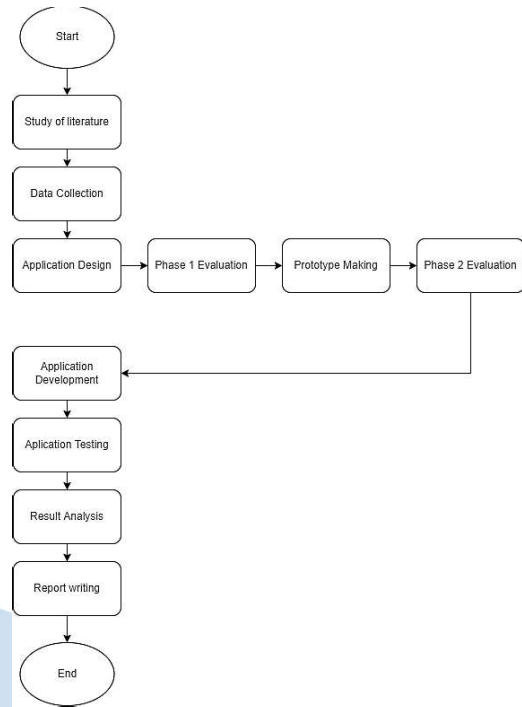


Fig 1. Research methodology

1) Evaluation Object

The main object that will be evaluated from this research is the original Cinépolis website. Here are the pages that are the main focus for analysis:

1. Home
2. Ticket
3. Schedule
4. Schedule with show times of each film
5. Movies
6. Detail Movie
7. Cinemas
8. Cinemas after search filter
9. Cinemas if no filter results were found
10. Detail Cinema
11. F&B
12. News & Promotions
13. Detail News
14. Detail Promotion

2) Evaluator

This research was assisted by 3 evaluators who specialize in the field of UI / UX [8]. The evaluation will be divided into 2 stages, where the first stage consists of Evaluator 1 and Evaluator 2, while the

second stage only consists of Evaluator 3. Each evaluator is given approximately 1 hour to explore and find problems on the Cinépolis website.

TABLE II EVALUATOR TERMS AND CRITERIA

| Character | Condition |
|---------------------|---|
| Usability Knowledge | Have extensive knowledge in terms of UI / UX and understand the 10 principles of Heuristics |
| Working Experience | Have work experience in the field of UI / UX |

3) Evaluation result

TABLE III WEBSITE EVALUATION STAGE

| Evaluation Stage | Name | Usability Understanding | Work experience |
|------------------|-------------|-------------------------|---------------------------------|
| 1 | Evaluator 1 | Understand | UI/UX Designer at Antikode |
| 1 | Evaluator 1 | Understand | Senior UX Designer at Tokopedia |
| 1 | Evaluator 2 | Understand | UI/UX Designer at Antikode |

4) Phase 1 Evaluation

Stage 1 evaluation is an evaluation carried out on the original Cinépolis website with the assistance of 2 evaluators.

a) Evaluator Results 1

TABLE IV RESULT FINDING PROBLEMS FROM EVALUATOR I

| Problem Found | Severity Ratings | Heuristic Number |
|--|------------------|------------------|
| Very messy website with no clear CTA for users | 4 | 8 & 6 |
| Main Banner size is not ideal | 3 | 8 |
| The website hierarchy is not clear. Almost the entire website section is larger than the Now Showing section (News, Event, Ad Banner), so users are confused which section they should see first | 4 | 6 & 7 |
| Too much white space on the left and right of the website | 3 | 8 |
| All colors seem to dominate | 4 | 8 |
| The mobile app download banner ad is at the top of the website | 2 | 8 |
| Progress Bar and tab design look the same, can make users very confused | 4 | 8 & 3 |
| The distance between the movie posters is too close, so users are confused about the title of the movie that belongs to the poster above or below | 4 | 6 |
| The function of the "Find a Cinema" bar is not clear | 3 | 4 |
| The purpose of the page is not clear | 4 | 6 |

b) Evaluator Results 2

TABLE V RESULT FINDING PROBLEMS FROM EVALUATOR II

| Problem Found | Severity Ratings | Heuristic Number |
|---------------|------------------|------------------|
| | | |

| | | |
|---|---|---|
| There is no identifier in the header to indicate the active page | 3 | 1 |
| Newsletter is displayed before Now Showing | 2 | 8 |
| The "We Are Hiring" section doesn't fit the context of the web page | 3 | 8 |
| The overall appearance of the website is very stiff | 1 | 8 |
| "Change Showtime" and "Next" positions are reversed | 4 | 4 |
| Step by step ticket booking is displayed from beginning to end, making users not focus on filling out the page that is currently open | 3 | 2 |
| Prices shown are not marked with commas | 1 | 4 |
| The features on the Ticket and Schedule pages are almost exactly the same, so the web becomes redundant | 4 | 4 |
| No message appears when the searched cinema and cinema class has no results (only displays Blank Space) | 3 | 1 |
| Breadcrumbs have no important role on the page | 1 | 8 |

c) Accumulation Phase 1

Accumulated Value =

Total Severity Rating Value

Frequency of Problems Appearing in Stage 1 Evaluation

The following are the results of the accumulation of the problem findings in the evaluation stage 1:

- i) 3 heuristic principles with Usability Catastrophe values (Highest level of repair) on heuristic numbers 3, 6, and 7.
- ii) 3 heuristic principles with Major Usability Problem scores on heuristic numbers 1, 2, and 4.
- iii) 1 heuristic principle with a value of Minor Usability Problem (Low level improvement) on the heuristic number 8.
- iv) 3 heuristic principles with a value of I don't agree (Not a problem) on heuristic numbers 5, 9 and 10.

d) Recommendations for Improvement of Phase 1 Evaluation

TABLE VI RECOMMENDATIONS FOR IMPROVEMENT OF PHASE 1 EVALUATION

| Problem Found | Repair Recommendations |
|--|------------------------------------|
| Very messy website with no clear CTA for users | Revamp entire website pages |
| Main Banner size is not ideal | Adjust the size of the Main Banner |

| | |
|--|---|
| The website hierarchy is not clear. Almost the entire website section is larger than the Now Showing section (News, Event, Ad Banner), so users are confused which section they should see first | Improve the website hierarchy by determining the order of priority in terms of features, and adjusting the size of features based on their priority |
| Too much white space on the left and right of the website | The main page of the feature is expanded so that there is less white space on the left and right of the website |
| All colors seem to dominate | Determine the primary color, second color, and color palette |
| The mobile app download banner ad is at the top of the website | Create your own special section "Download Mobile App" |
| Progress Bar and tab design look the same, can make users very confused | The design is made different or simplified |
| The distance between the movie posters is too close, so users are confused about the title of the movie that belongs to the poster above or below | Give enough space between the posters, the title of the film is placed under the poster |
| The function of the "Find a Cinema" bar is not clear | Removed "Find a Cinema" bar |
| The purpose of the page is not clear | F&B menu removed |
| There is no identifier in the header to indicate the active page | Make an identifier by distinguishing the color of the text on the currently active header menu |
| Newsletter is displayed before Now Showing | Newsletter feature moved to Footer |
| The "We Are Hiring" section doesn't fit the context of the web page | Removed from Home |
| The overall appearance of the website is very stiff | Some elements on the website can be made more modern, for example, a movie poster is given a slight curve at the corners (Rounded edge). |
| "Change Showtime" and "Next" positions are reversed | Change the position of the "Next" button with "Change Showtime" so that the position of the "Next" button is on the far right (End User Decision). The "Changes Showtime" button can be omitted and use the breadcrumb at the top of the page only if the user wants to return to the previous page |
| Step by step ticket booking is displayed from beginning to end, making users not focus on filling out the page that is currently open | The tab "Select Seats" et al does not need to be displayed before the step the user is running has not been completed |
| Prices shown are not marked with commas | Prices are marked with a comma as a separator (For example Rp. 40,000) |
| The features on the Ticket and Schedule pages are almost exactly the same, so the web becomes redundant | Combined into one tab menu named Schedule |

| | |
|---|---|
| No message appears when the searched cinema and cinema class has no results (only displays Blank Space) | Show a confirmation message to the user, for example: "The cinema you are looking for is not found" |
| Breadcrumbs have no important role on the page | Breadcrumb removed |

5) Phase 2 Evaluation

Stage 2 evaluation is an evaluation carried out on the Cinépolis repair prototype using figma, assisted by 1 evaluator.

a) Evaluator Results 3

TABEL VII RESULT FINDING PROBLEMS FROM EVALUATOR 3

| Problem Found | Severity Rantings | Number Heuristic |
|--|-------------------|------------------|
| Footer integrates with web page | 3 | 8 |
| The font size of the seat number is too small, and each row of seats is too close together | 2 | 8 |
| The font size for ordering details and filling out forms is too small | 2 | 8 |
| The question form is next to the field | 2 | 8 |
| Using previous and next text in pagination | 1 | 2 |

b) Accumulation Phase 2

Accumulated Value =

Total Severity Rating Value

Frequency of Problems Appearing in Stage 2 Evaluation

The following are the results of the accumulation of the problem findings in the 2nd stage evaluation:

- i) 1 heuristic principle with a value of Minor Usability Problem (Low level improvement) on the heuristic number 8.
- ii) 1 heuristic principle with a value of Cosmetic Problem Only (lowest level of improvement) on heuristic number 2.
- iii) 8 heuristic principles with a value of I don't agree (not a problem) on heuristic numbers 1, 3, 4, 5, 6, 7, 9 and 10.

c) Recommendations for Improvement of Phase 2 Evaluation

TABEL VIII RECOMMENDATIONS FOR IMPROVEMENT OF PHASE 2 EVALUATION

| Problem Found | Repair Recommendations |
|--|--|
| Footer integrates with web page | Can be given a different color or given a border between the web page and the footer |
| The font size of the seat number is too small, and each row of seats is too close together | The font size of the seats is made bigger and gives space between rows of seats |
| The font size for ordering details and filling out forms is too small | Enlarged font size |

| | |
|--|---|
| The question form is next to the field | Questions can be placed above the field to make it easier for users to read |
| Using previous and next text in pagination | Can be simplified by using the < icon for previous and > for next |

III. IMPLEMENTATION AND TESTING

Based on the questionnaires that have been distributed, from a total of 37 respondents, the results obtained with the SUS calculation method are the Cinépolis repair website which has been built into a website based on recommendations for improvement using the Heuristic Evaluation method, getting a score of 88.10. This means that the Cinépolis repair website is above the SUS standard score of 68 and is in grade A, namely the Excellent category[6].

IV. CONCLUSION

Recommendations for improvements to the Cinépolis repair website using the Heuristic Evaluation method twice, namely the original Cinépolis website in the first stage and the wireframe in the second stage have been successfully implemented. The comparison of the value of the original Cinépolis website with the revamping website of Cinépolis is 54.03 and 88.10. The revamping website Cinépolis got a value of 34.07 greater than the value of the original website. So it can be concluded that the revamping of the Cinépolis website has been successful in improving the appearance of the interface and has succeeded in improving the user experience when using the website.

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