

# CERTIFICATION OF APPROVAL

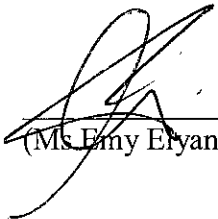
## Usability Studies of e-Government Website (HALALJAKIM)

By

Azizah Ibrahim

Final report submitted in partial fulfillment of  
the requirement for the  
Bachelor of Technology (Hons)  
(BUSINESS INFORMATION SYSTEM)

Approved by

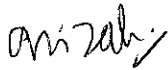


(Ms. Emy Eryanee bt. Mustapha)

UNIVERSITI TEKNOLOGI PETRONAS  
TRONOH, PERAK  
JULY 2007

## **CERTIFICATION OF ORIGINALITY**

This is to certify that I am responsible for the work submitted in this project, that the original work is my own except as specified in the references and acknowledgements, and that the original work contained herein have not been undertaken or done by unspecified sources or persons.



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AZIZAH IBRAHIM

## **ABSTRACT**

The aim of this project is to study and analyze why it is Human Computer Interface is very important as a guideline to build a website especially in Government sectors. Guideline, principles and theories which can provide remedies and medicine for these problems have matured in recent years. The major discussion of this study is to improve the government website on focusing the interface design.

This paper will begin with a discussion about the background study of e-government website. The problem statement and scope of studies will be discussed after that. Following will be the literature review and two major part of methodology which are research methodology and design methodology. Next, the results and discussion part will be discussed about the finding of this project. Lastly, the conclusion and recommendation will be discussed for further improvement in the future.

## ACKNOWLEDGEMENT

I would like to express my greatest appreciation and sincere thanks to many individual who helped, assisted, guided and supported me a lot in finishing this Final Year Project. First and foremost, a highest gratitude to my beloved parents and family for their support and encouragement. To my supervisor, Ms Emy Elyanee Mustapha, thank you for her guidance and endless advice, the knowledge offered and the time spent in improving this project.

In this opportunity, I also would like to acknowledge with highest appreciation to my colleagues, for their cooperation and assistance. I will not forget all the contribution that all of you have done for me for the rest of my life. I sincerely would like to apologize for any mistaken that I made accidentally during this project.

Thank you to all of you.

## TABLE OF CONTENTS

<b>CHAPTER 1.....</b>	<b>1</b>
<b>INTRODUCTION.....</b>	<b>1</b>
1.0 Background Study.....	1
1.1 Problem Statement.....	2
1.3 Objective .....	3
1.4 Scope of Study.....	4
<b>CHAPTER 2.....</b>	<b>5</b>
<b>LITERATURE REVIEW AND STUDY.....</b>	<b>5</b>
2.0 Definition of E-government.....	5
2.1 E-government in Malaysia.....	5
2.2 Usability testing and user interface design.....	8
<b>CHAPTER 3.....</b>	<b>16</b>
<b>METHODOLOGY/PROJECT WORK.....</b>	<b>16</b>
3.0 Introduction.....	16
3.1 Methodology.....	16
3.2 Task Scenario and Questionnaire Design.....	20
<b>CHAPTER 4.....</b>	<b>23</b>
<b>RESULTS AND DISCUSSION.....</b>	<b>23</b>
4.1 Introduction.....	23
4.2 Types of Data Collected.....	23
4.3 Usability Criteria.....	24
4.4 Findings and Recommendation.....	27
4.5 Feedback on Pre-test Questionnaire.....	27
4.6 Test Results.....	31
4.7 Feedback on post-questionnaire.....	35
4.8 The Website.....	42
4.9 Usability Finding.....	44

<b>CHAPTER 5.....</b>	<b>52</b>
<b>CONCLUSION AND RECOMMENDATION.....</b>	<b>52</b>
5.0 Conclusion.....	52
5.1 Recommendation.....	52
<b>REFERENCES.....</b>	<b>53</b>
<b>APPENDICES.....</b>	<b>55</b>

## LIST OF FIGURES

Figure 1: Guideline for usability testing of United States government.....	13
Figure 2: Project Workflow.....	16
Figure 3: Internet Utilization Rate.....	27
Figure 4: Employment Category .....	28
Figure 5: E-government Website that usually access.....	28
Figure 6: Awareness of E-Government Services.....	28
Figure 7: Internet Utilization Rate.....	29
Figure 8: Students Category.....	29
Figure 9: E-government website that usually access.....	29
Figure 10: Awareness of E-government Services.....	30
Figure 11: Summary of Need/Interest in having 'HALAL' information .....	35
Figure 12: Summary of speed and responsiveness.....	36
Figure 13: Summary of usable of the information in HalalJakim website.....	37
Figure 14: Summary of recommended of the website.....	38
Figure 15: Original HALALJAKIM website.....	42
Figure 16: New prototype design HALALJAKIM homepage.....	43

## LIST OF TABLES

Table 1: Timing Results Part A (Original Website).....	31
Table 2: Task Scenario Question Rating Part A (Original Website).....	32
Table 3: Timing Results Part B (New website Design).....	33
Table 4: Task Scenario Question Rating Part B (New website design).....	34

## CHAPTER 1 INTRODUCTION

### 1.0 Background Study

It seems a natural human characteristic to want to communicate, and when there's a lot of websites build they start to demand for the meaningful and fast to understand websites. The main websites that can help to give users meaningful information is government website. Government should be citizen-centered, results-oriented, and market-based and improved financial management. Effective implementation of E-Government is important in making E-Government more responsive and cost-effective. Electronic government (e-government) was implemented and it is described as the electronic delivery of public services to citizens through the Internet and the World Wide Web.

The main goal of the e-government is to enable citizens to carry out more transactions or dealings with public agencies 'electronically'. As e-government websites are the gateways for the public to access information and services provided by the government in the information age, the e-government websites have to be easy for all citizens to use, including those with disabilities, and therefore, universal accessibility is a crucial issue in their design. The number of people with disabilities is expected to increase significantly in the next decade as the world's population is rapidly growing older, and the number of Internet users of old age increases exponentially. This leads to the need that website designers have to cater the issues of content accessibility when designing websites. Therefore, usability studies occur to overcome this issue.

Usability means that the extent to which specified users to can use a product achieves specified goals with effectiveness, efficiency, and satisfaction in specified context of use. Usability testing is a means for measuring how well people can use some human-made object (such as a web page, a computer interface, a document, or a device) for its intended purpose, i.e. usability testing measures the usability of the object. Usability



testing focuses on a particular object or a small set of objects, whereas general human-computer interaction studies attempt to formulate universal principles.

## **1.1 Problem Statement**

Government agencies wishing to provide a service through any channel must make it equally available to every citizen. One of the ways is by produce website as it is one of the best ways to deliver their message to the citizen. But the problem here is how attractive and useful the website to the citizen. How much percentage of citizens will be access to the e-government? Based on the study, there is less than 10% of citizens access the e-government website. One of the reasons why government website is not popular is because of the lack designing user interface.

The needs of all citizens must be considered equally. Otherwise realization of the idealistic vision of all citizens being able to interact freely with a responsive government through a multitude of technological channels runs the risk of increasing social exclusion and the technologically literate will increase their advantage by monopolizing direct access to government. Nowadays, Human Computer Interaction principles are being neglect in government websites. I hope that this project could overcome this problem.

## 1.2 Objective and Scope of Study

### 1.2.1 Objective

The purpose of this project is to study the 'ease-of-use' of proposed web page designs from a user participant's standpoint. Included would be the location, placement, viability of navigational schema and overall site/page functionality. The secondary purpose would be to study the image branding and overall 'look and feel' of the proposed designs from a marketing and aesthetic perspective. The main benefits of conducting such a study would be optimized 'ease-of-use' of the site(s) and a clearer, stronger brand image for the e-government for its various audiences. Besides, the information provided by government agencies via the E-government sites is stale and not current [2]. The sites also are not easy for the novices to navigate [2].

Besides, this project also wants to determine typical user behavior on selected e-government website and to collect feedback and comments about the website from a range of users. The data collected will be use to produce a prototype of the e-government website as a guide following the Human Computer Interactive (HCI) principle.

The prototype of the website will be compared with the current e-government website. The prototype will be build by fulfill the HCI principle and meaningful for the users to access it in the future. This project will be on going by referring to the Jakob Nielsen rules and Human Computer Interaction text book by Alan Dix, Janet Finlay, Gregory D. Abowd, and Russell Beale.

### **1.2.2 Scopes of Study**

The target users for the testing and evaluation are the citizens. The citizens that are chosen are students from University Technology Petronas and Ipoh's citizen. The final product will be produce a prototype (new) of the e-government website and how it can effect the population of the users to use it. This study research is useful for the e-government website builder to practice the Human Computer Interactive principle.

The Ministry Islamic Development Malaysia (HALAL JAKIM) e-government website has been chosen to do a study of its usability studies according to HCI principles as well as Jakob Nielsen rules.

## CHAPTER 2

### LITERATURE REVIEW AND THEORY

#### 2.0 Definition of E-government

E-government is defined as a way for governments to use the most of innovative ICT, particularly Web-based Internet applications, to provide citizens and businesses with more convenient access to government information and services, to improve the quality of the services and to provide greater opportunities to participate in democratic institutions and processes. In other words, the challenge for E-government will be do the following:

- Provide citizens with access to government information
- Deliver government services to citizens
- Provide a portal for processing government information between citizens and businesses with government
- Facilitate citizen participation in government, creating digital citizens in a digital democracy. [2]

#### 2.1 E-government in Malaysia

E-government in world wide such like in United Kingdom and United States is not new among the citizens. But, e-government in Malaysia can be considered as new and there are still needed improvement in terms of it technology.

Muhammad Abdul Karim, Malaysian Administration Modernization and management Planning Unit, Prime Minister's Department, Malaysia describes the growth of e-government in Malaysia [5]:

*There is a rising tide of 'digital' citizens now clamoring for more and better government services and these expectations have profound implications on the delivery of services.*

*Many governments have thus undertaken major transformation processes that maximize the utilization of information and communication technologies through e-government initiatives aimed at facilitating a collaborative and efficient administrative environment and enhance delivery of government services. Challenges facing e-government are varied and multi-faceted and require innovative uses of technologies to ensure that services can be provided to citizens in a seamless fashion. The article also describes the Malaysian experience in implementing e-government by highlighting several of the key programmes undertaken and the lessons learned. It is also imperative for governments to actively and continuously monitor and measure e-government outcomes against targeted key performance indicators as well as to leverage on international benchmarking to assess their position globally in order to identify and address major gaps.*

This article shows that the government really take serious in terms of improve the quality of the delivery of e-government to their citizens. E-government tried to improve their skill in delivering the service by focusing on the latest technology.

There are also a website doing a survey to identify the quality and service of e-government in Malaysia.

*This Malaysia E-Government academic research is being carried out by a team of researchers from Queen's University of Belfast. The questionnaire is designed to be filled in by individual users of E-Government services, and all responses given to this questionnaire will be treated in the strictest confidential. Your feedback will help us better understand the ways in which the e-government services in Malaysia should be provided, and how your needs, wants and expectations should be met or exceeded. We look forward to hearing from you. [6]*

This statement clearly states that doing a survey on e-government is getting popular and not a strange issue in Malaysia. The people really concerned on how to improve the e-government website so that the delivery will meet expectation.

*“One of the flagships the Malaysian government initiated in the MSC is the E-government flagship. This is seen as the chance to modernise all parts of the Malaysian government to ensure that they can satisfy all demands of the citizens, the public and the private sectors. By means of E-government they are not only trying to improve the way services are provided to citizens and companies, but also to improve the internal working process of government. The project aims to improve the ease, the accessibility and the quality of interaction of citizens and companies. At the same time it should improve flows of information and processes within government.” [2]*

Above statement clearly states that the e-government is in the process to improve their service. They want to ensure that their message to citizens is delivered clearly and understandable. One of it is e-government, and it is a right timing for the author to help government in this problem.

Indran Ratnathicam, from Harvard University describes the growth of e-government in Malaysia [3]:

*“The Malaysian government is placing its hopes for continued growth on a strategy of government-led policies and initiatives aimed at attracting high-end foreign investment and a transition to a knowledge economy (Ranking in ICT as Government Priority: 11). The plan, outlined as early as 1996, permeates all aspects of the Malaysian economy and society, including initiatives in telemedicine, e-government, education, and industry. Malaysia’s Vision 2020 is one of the most aggressive and comprehensive ICT plans in the world, and faces one of the greatest challenges: using ICTs to address the economic development hurdles of a highly rural developing country.”*

This statement tells that Malaysia’s government is in the process to improve their knowledge in ICT and they’re really serious in it.

## 2.2 Usability Testing and User Interface Design

Usability is about to test a finish product whether the end user will satisfy with it or not.

Article below prove it.

*Given the potential future importance of usability standards, it seems reasonable to study the usability of the standards themselves to assess whether developers can actually apply the content of the documents. Not much research is available on this topic yet, but existing evidence does indicate the potential for "meta-usability problems" (usability problems in a usability document). Mosier and Smith [1986] report that only 58% of the users of a large collection of interface guidelines found the information they were looking for (an additional 36% "sometimes found it"). de Souza and Bevan [1990] had three designers design an interface using a draft of the ISO standard for menu interfaces and report that they violated 11% of the rules and had difficulties in interpreting 30% of the rules.*

The draft standard was improved after the experiment, so the main lesson from this study is the need for usability testing of usability standards: the ability of designers to use and understand a standard can have more impact on interface quality than the rules specified in the standard. As with all system design, if the intended users (in this case, user interface designers) cannot use the system (in this case, a design standard) or have trouble doing so, the proper response is to redesign the system to make it more usable.

Usability is not just about testing the website, but it can be applied in any field, such like usability of a toy, etc. But, for this project, author will discuss about the usability of e-government website, where it is will be concentrate on user interface design. Jakob Nielsen [4] quotes that:

*"How users consume Web Pages such as where people start browsing on a page, whether they have banner and text link blindness, where users look for navigation, how*

*they react to different text types, relative attention allocated to text vs pictures and more. The real highlight of study is that peoples' eyes flutter fast across pages. Very little time is allocated to each page element, so you have to be brief and concise in communicating line. Pictures, images and moving objects tend to be more of an obstacle course for the eye. It's a bit strange finding, but it's consistent across websites. They tend to have a goal distracting user. Basically users have become savvy surfers of web pages, and that includes advertising content and in general fares very poorly*

From this quote, it is clearly stated that the image, types of text been used, colour of the webpage, are the method that will be evaluate in terms to make a good user interface. User interface can be defined as the main character of the whole website as it will be the first impression from the user whether they want to proceed to the next step or not.

For a user interface standard to increase usability in the resulting products, two conditions have to be met: The standard must specify a usable interface, and the standard must be usable by developers so that they actually build the interface according to the specifications. As reported by Potter et al. [1990], a user interface may have usability problems even when an interface standard is followed without violations. The usability of the resulting interfaces is obviously extremely important for the development of the actual content of interface standards, but the present paper will concentrate on whether developers can use standards. First, we report on a small laboratory study, and the main part of the paper than reports on a field study of the use of a real standard.

In terms doing the survey, there no need many participants involve. This stated in Jakob Nielsen guideline [9]:

*"As soon as you collect data from a single test user, your insights shoot up and you have already learned almost a third of all there is to know about the usability of the design. The difference between zero and even a little bit of data is astounding.*

*When you test the second user, you will discover that this person does some of the same things as the first user, so there is some overlap in what you learn. People are definitely*



*different, so there will also be something new that the second user does that you did not observe with the first user. So the second user adds some amount of new insight, but not nearly as much as the first user did.*

*The third user will do many things that you already observed with the first user or with the second user and even some things that you have already seen twice. Plus, of course, the third user will generate a small amount of new data, even if not as much as the first and the second user did.*

*As you add more and more users, you learn less and less because you will keep seeing the same things again and again. There is no real need to keep observing the same thing multiple times, and you will be very motivated to go back to the drawing board and redesign the site to eliminate the usability problems.*

*After the fifth user, you are wasting your time by observing the same findings repeatedly but not learning much new”.*

This statement tells that more participants involve less learning will be the author get, because the author will read same problems involve. It is better for the author to search more on the right guideline for this project.

In other field, such like shopping online, the study looks at the relative importance of usability compared to other problems.

*“In a survey of over 100 online shoppers, Zendor found that:*

- 33% respondents nominate poor website usability as their single biggest frustration when shopping on the Internet.*
- 20% of respondents reported that technical issues such as ‘slow sites’, ‘websites crashing’ and general ‘glitches’ as their biggest frustration.*
- 15% of respondents cited delivery or fulfillment issues as their biggest bugbear, the majority refer to ‘lack of delivery options’, ‘problems with returns’ and ‘high*

*P and P charges', although a minority (20%) are put off returning to the site as a result. " [12]*

While, this statement prove that usability of the website is really important to attract users and lack of attractive user interface give a big effect to shopping online.

*Biggest Mistakes in Web Design 1995-2015 — I've gathered what I think are the biggest web design mistakes committed during the period 1995 to 2015. Yes it is a little facetious to say these mistakes will be made in the year 2015, but its human nature to repeat your mistakes over and over. But it's human nature to repeat your mistakes over and over.*

*If you don't want to read the article, here's the list:*

- 1. Believing people care about you and your web site.*
- 2. A man from Mars can't figure out what your web site is about in less than four seconds.*
- 3. Mystical belief in the power of Web Standards, Usability, and tableless CSS.*
- 4. Using design elements that get in the way of your visitors.*
- 5. Navigational failure.*
- 6. Using Mystery Meat Navigation.*
- 7. Thinking your web site is your marketing strategy.*
- 8. Site lacks Heroin Content.*
- 9. Forgetting the purpose of text.*
- 10. Too much material on one page.*
- 11. Confusing web design with a magic trick.*
- 12. Misusing Flash.*
- 13. Misunderstanding the use of graphics.*
- 14. AffFrontPage*
- 15. Javascript*

### 2.2.1 Questionnaire for User Interaction Satisfaction

*“ In addition to evaluating 'hard' measures like task speed and error rates, it is extremely useful to investigate the less quantifiable aspects of interface design that cumulatively (and often subtly) contribute to users' subjective feelings of satisfaction or frustration. The cleverest system in the world does no good if users avoid it because they find it annoying.*

*To this end the authors have employed the Questionnaire for User Interaction Satisfaction (QUIS), developed by the Human-Computer Interaction Laboratory at the University of Maryland. The QUIS is not a perfect survey instrument, but it is as close to an industry standard as exists in the discipline of Human Computer Interaction. Designed to provide reliable and consistent cross-platform and cross-application satisfaction measures, the QUIS does not specifically address Web technology.*

*The current instrument asks participants about:*

- Their demographic background*
- Their overall reactions*
- The features of individual screens (characters, layout, sequences and moving between screens*
- Terminology and system information (system status, instructions, error messages, etc.)*
- Learning to use the system*
- System capabilities (speed, reliability, and error correction facilities).*

*All of the questions require the participants to circle a scale value ranging from 1 to 9 to indicate their satisfaction. The scales are constructed so that a value of 1 indicates*

maximum dissatisfaction and a value of 9 indicates maximum satisfaction. Every section also has space for free-form comments.

We have modified the QUIS slightly, eliminating some irrelevant questions and adding questions that are particular to hypermedia applications such as Web sites. We have taken care to make the smallest number of changes possible, so as not to introduce language bias (the phrasing of a question often influences the answer) or inadvertent redundancy. “

The QUIS is best administered immediately after a user has interacted with the system being tested.

Currently in version 5.5, the QUIS is available from the University of Maryland. A Web-enabled version has been promised for the not-too-distant future.

## 2.2.2 Methodology

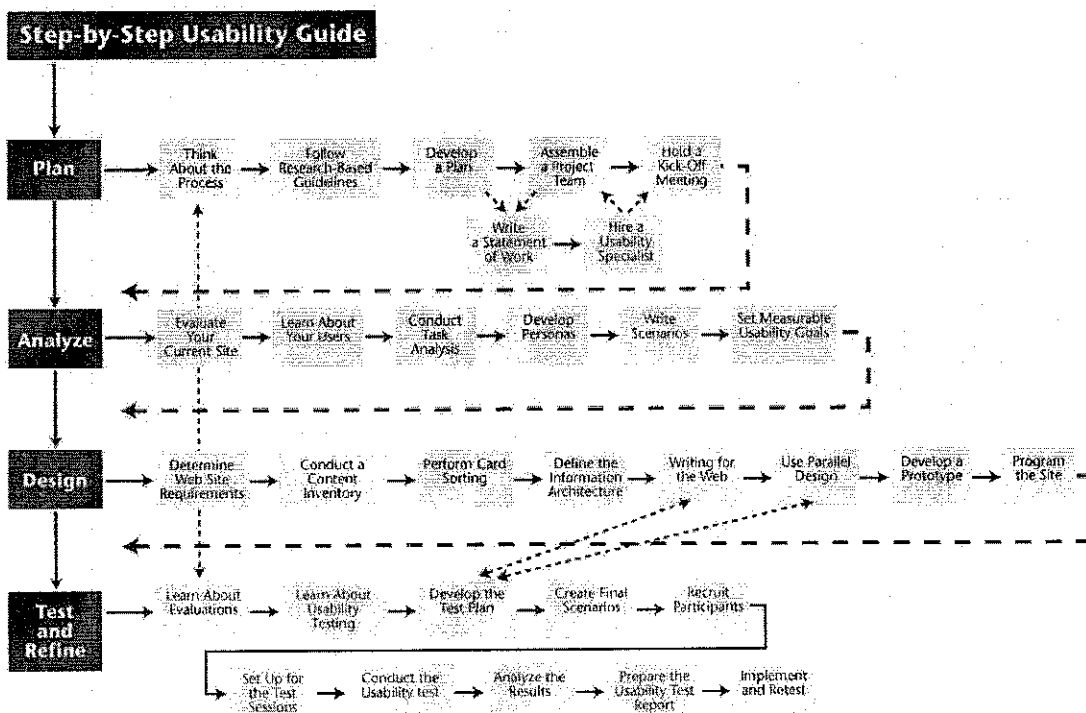


Figure 1: Guideline for usability testing of United States government

This methodology is taken from the usability.gov website which is a website about guiding user for developing usable and useful website. Author found that this step similar with the usability testing that has been conducted during FYP Part B. This statement proves that the steps taken right now are suitable for this project.

*“Here are seven keys to writing clearly for the Web:*

- *Put the main message first.*
- *Cut out words.*
- *Keep paragraphs short.*
- *Keep sentences short.*
- *Use fragments.*
- *Use the users' words.*
- *Give examples.*

#### ***Put the main message first***

*What's the key message (the essential message) that you are trying to convey? Figure that out and put it first.*

*Next put what will interest most users below the main message. Put further details that only some users want on other pages that are linked from the main message.*

#### ***Cut out words***

*You can often convey the essential message in half as many words as you originally wrote.*

*Revise. Revise. Revise. Do not assume that your first draft is the best you can do. Write a draft. Leave it for a day or so. Go back to it and try to make your point even more succinctly.*

#### ***Keep paragraphs short***

*A one sentence paragraph may be fine.*

#### ***Keep sentences short***

*Users need to grasp the meaning quickly. You can often put secondary information in another sentence, in a table, in fragments, or leave it out entirely.*

### ***Use fragments***

*In frequently asked questions (FAQs) for example, you don't have to repeat words from the question in the answer.*

### ***Use the users' words***

*Think about these points:*

- *The Web is available globally. Should you change words to reach a world-wide audience?*
- *Even if you are writing for a United States government site, don't you want people outside of the U. S. to understand your content? Even if your audience is only U. S. residents, consider how many of them speak English as a second language.*
- *For your broader audience, should you translate the Web pages into other languages? Short sentences, simple words, and consistency all contribute to easier translations.*
- *Did all users understand the language in your paper documents? Even your traditional audiences may be better served by plain language. “ [13]*

Above statement is taken from the usability.gov website under the subtopic of how to write a web design for government website. It is clearly stated that government website should have simple design but effective for the users to access it. Example, make sure the message delivered clearly and understandable for the users.

## CHAPTER 3 METHODOLOGY

### 3.0 Introduction

For this project, the methodology will be spiral model.

### 3.1 Methodology

The methodology contains 5 important steps which are project definition, requirement analysis, design, coding and testing and deliverables.

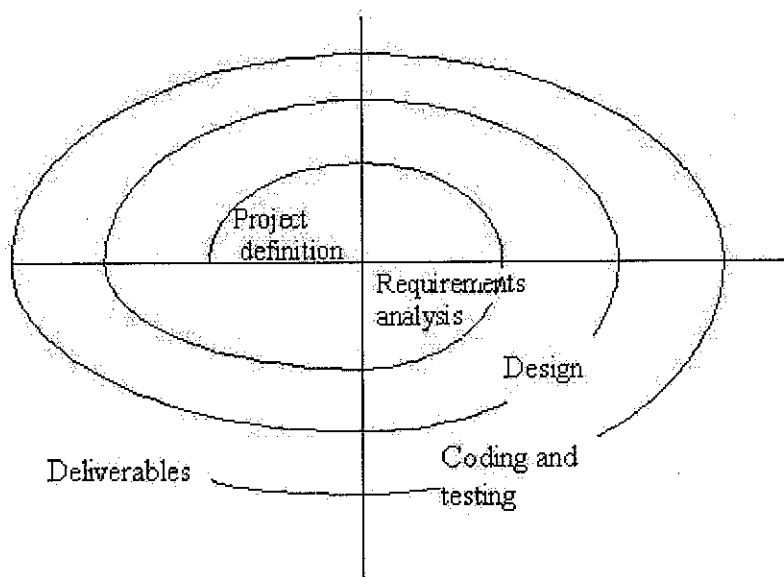


Figure 2: Project Workflow

### **3.1.1 Project definition**

The first step is to gather as much as information about the usability studies and e-government in Malaysia. The author will do a research on this topic. Internet plays the main role in this research project. Most of the research paper that author found is by using search engine such like Google, Yahoo! Search, Wikipedia, and Dogpile.com. This entire source really helping the author to get some information related to HCI areas to fulfill the requirement needed to finish this project. Besides, the author also get the related books from Information Resource Centre in campus, and most of them are written by Jakob Nielsen as it will be use as a guideline for this entire project. The author will be also using the electronic mail to interview some expert in this area.

Another method used is by conducting a survey. It is one component of the usability testing. Usability testing usually involves a controlled experiment to determine how well people can use the product. Rather than showing users a rough draft and asking, "Do you understand this?" usability testing involves watching people trying to use something for its intended purpose. For example, the participants need the clearly instructions about what they're going to do like they have to go through the e-government website than make an evaluation and answer the questionnaire given. Instruction phrasing, illustration quality, and the website design all affect the assembly process. Below is the first stage of usability testing which is heuristic evaluation part.

#### **3.1.1.1. Cognitive Walkthrough**

The cognitive walkthrough function is to give author a chance to early mockups of designs quickly. It does not require a fully functioning prototype, or the involvement of users. Instead, it helps designers (author) to take on a potential user's perspective, and therefore to identify some of the problems that might arise in interactions with the system.



### 3.1.1.2 Heuristic Evaluation

The goal of heuristic evaluation is a checklist approach that catches a wide variety of problems but requires several evaluators who have some knowledge of usability problems.

The evaluators independently examine a user interface and judge its compliance with a set of usability principles. The result of this analysis is a list of potential usability issues or problems. The usability principles, also referred to as usability heuristics, are taken from published lists. Ideally, each potential usability problem is assigned to one or more heuristics to help facilitate fixing the problem. As more evaluators are involved, more true problems are found.

Some evaluators try to estimate the degree to which each usability issue potentially could impede user performance or acceptance. This is done to help set priorities for making revisions to the system. However, judging the severity of proposed usability issues has been shown to be very difficult to do.

Nielsen (1994), after evaluating several sets of heuristics, concluded that a better set of heuristics may be:

1. Ensure good visibility of system status.
2. Have a good match between the system and the real world.
3. Ensure user control and freedom.
4. Use consistency and standards.
5. Design to prevent user errors.
6. Design to facilitate recognition rather than recall memory.
7. Provide for flexibility and efficiency of use.
8. Use aesthetic and minimalist design concepts.
9. Help users recognize, diagnose, and recover from errors.
10. Help and documentation.

### **3.1.2 Requirements Analysis**

In this phase, author herself view the original site, page and the content of the website. Author has to make sure the summary from the first step will be using as a guidelines that are used as reference to develop the new design of the interface. The requirements analysis is done with the guidelines of Jakob Nielsen theory and based on Human Computer Interaction.

### **3.1.3 Design**

The design of the new website is done by fulfill the steps from the HCI principle as according to the Jakob Nielsen rules. There are ten criteria of Jakob Nielsen rules and author has managed follow the 7 out of the 10 criterias. Further discussion on the criteria is in chapter 4 (Results and discussion). In this design stage, author has created a few designs, and not all the design is satisfied from the participants and some of them still lack of HCI principles. At last, the final product has been chosen and usability testing has been conducted by using the final design that has been chosen from the participants.

### **3.1.4 Coding and testing**

Coding and testing has been conducted after author has completed the new design. There are 2 designs was proposed to the participants involve in the usability testing. The design that is chosen was used to complete this usability studies on HALALJAKIM website.

### **3.1.5 Deliverables**

The final design of the prototype website will be present as it is considered the best choice after usability testing done.

### 3.1.6 Development Tools

This Usability Studies system will be using Macromedia Dreamweaver MX and Adobe Photoshop CS.

### 3.2 Task Scenario and Questionnaires Design.

Setting up a usability test involves carefully creating a scenario, or realistic situation, wherein the person performs a list of tasks using the product being tested while observers watch and take notes. Several other test instruments such as scripted instructions, paper prototypes, and pre- and post-test questionnaires are also used to gather feedback on the product being tested. The aim is to observe how people function in a realistic manner, so that developers can see problem areas, and what people like. Techniques popularly used to gather data during a usability test include think aloud protocol and eye tracking.

#### 3.2.1 Task Scenario Design

Below are the task scenarios. To view the questionnaire designed, please refer to **Attachment 1**.

##### Scenario 1

- 1a. Please access the website <http://www.halaljakim.gov.my/>
- b. Without moving the mouse or using the keyboard, please describe what you see.  
After you understand what the website is about go to the next step.
- c. Now, you may move the mouse around. Feel free to click on anything or go anywhere.

### **Scenario 2**

Now, we want to know if you are easily alert with the latest event on the website. Find in the website, where you can find the latest event such like 'Pengumuman' and 'Kenyataan Media'.

### **Scenario 3**

Now, assume that you want to know about others article that related to the Halal information. Find 'Fatwa Halal'. Click and explore.

### **Scenario 4**

Now, you're more familiar with the website. See the links in the 'Info Halal' box. We want to know whether the text captured your eyes easily. Besides, we also want to know how you feel the way the content of information is arranged. Is it too crowded? Confusing? Easy eye catch?

### 3.2.2 Questionnaires Design

#### Pre-test questionnaire

The questions asked the participants to supply their background with familiarity with the knowledge they know about Halal issue and products tested along with their Internet experience. Demographic type data was also collected regarding age range, ethnic background, gender, and affiliation with the citizens. For the pre-test questionnaire designed please refer to **Attachment 2**.

#### Post-test questionnaire

The questions contained a questionnaire for the participant to fill out upon before and after completion of the usability test. This additional information provided the participant with open ended questions enabling the participant to voice what they liked best, least, and recommendations for future improvement for each site, along with any other comments they may have regarding the Halal products and issue in it. For the post-test questionnaire designed please refer to **Attachment 3**.

## CHAPTER 4

### RESULTS AND DISCUSSION

#### 4.1 Introduction

Usability testing has been done for both Part A (original website) and Part B (new prototype design website). In this chapter, the topic discussed will be focus on how the data is collected and the results of the usability studies of HALALJAKIM website.

#### 4.2 Types of data collected

##### 4.2.1 Quantitative data

Quantitative data consists of 'hard', measurable results that author analyzed to determine how the test subjects performed compared to established benchmarks. Some of the quantitative information author collected included time spent on the task, the percentage of test subjects succeeding or failing at tasks and so on.

##### 4.2.2 Qualitative data

Qualitative data consists of records of subjective impressions and opinions. Some of the qualitative information author collected included individual opinions about Halal Jakim website's quality, perceptions about Halal Jakim website's speed and ease of use, and so on. Author captured some of the qualitative commentary during testing, but also received good qualitative feedback in the questionnaires and post-test interview.

### 4.2.3 Quantitative data collected during testing

Author collected the following information during formal testing:

- Time to complete each task
- Number of test subjects completing tasks within allocated time

### 4.2.4 Qualitative data collected during testing

During and after the test author also collected “qualitative” data, consisting mostly of commentary recorded during the tests.

Author collected data including:

- Facial expressions
- Verbal comments when test subjects “thought out loud”
- Spontaneous verbal expressions (comments)
- Free comments

## 4.3 Usability Criteria

To categorize the test observations, author applied a usability test analysis model that categorizes product usability problems according to whether they fail to meet any of the following 10 criteria.

### 1. Visibility of system status

The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

## **2. Match between system and the real world**

The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

## **3. User control and freedom**

Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.

## **4. Consistency and standards**

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

## **5. Error prevention**

Even better than good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.

## **6. Recognition rather than recall**

Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another.



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Instructions for use of the system should be visible or easily retrievable whenever appropriate.

### **7. Flexibility and efficiency of use**

Accelerators: unseen by the novice user: may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users.

Allow users to tailor frequent actions.

### **8. Aesthetic and minimalist design**

Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

### **9. Help users recognize, diagnose, and recover from errors**

Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.

### **10. Help and documentation**

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

#### 4.4 Findings and recommendation

Using the evaluation criteria discussed previously, author analyzed the test results to develop a set of findings. This section discusses:

- Usability problems noted during the test (findings)
- Recommendations for improving HalalJakim website
- Feedback author collected from test subjects using questionnaires and post-test interviews.

#### 4.5 Pre-test Questionnaire:

##### Feedback on pre-test questionnaire (Part A)

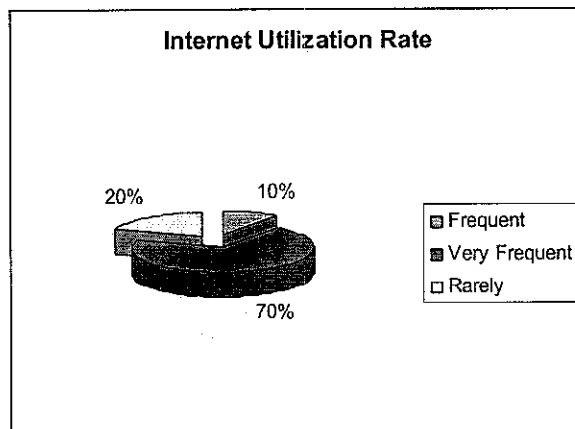


Figure 3: Internet Utilization Rate

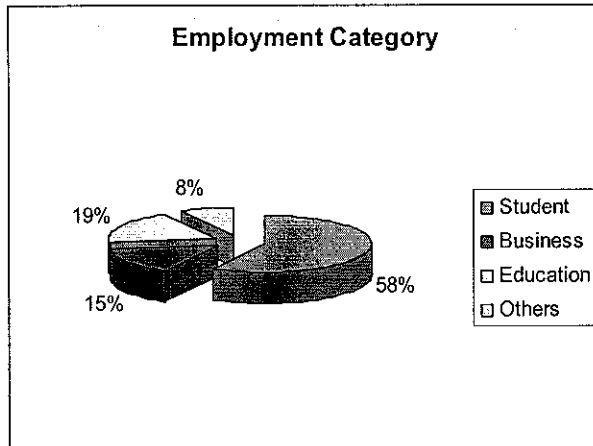


Figure 4: Employment Category

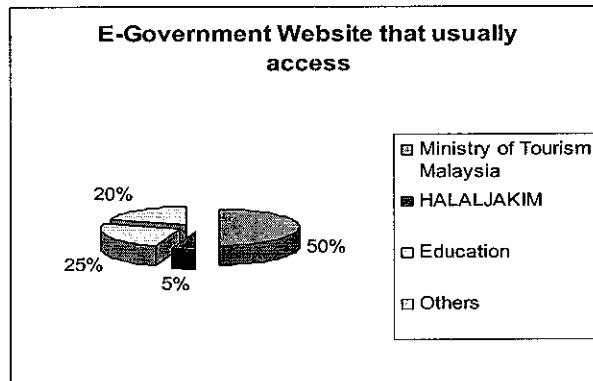


Figure 5: E-government Website that usually access

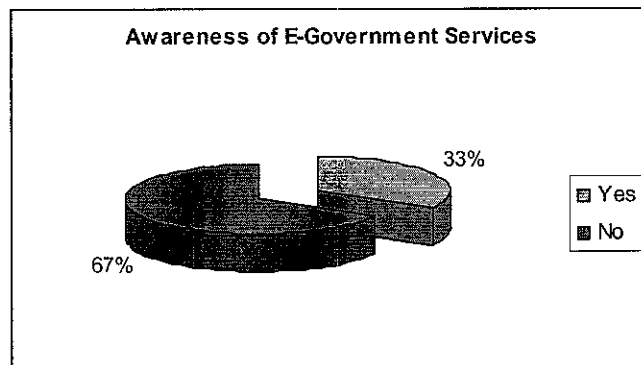


Figure 6: Awareness of E-Government Services

## Feedback on pre-test questionnaire (Part B)

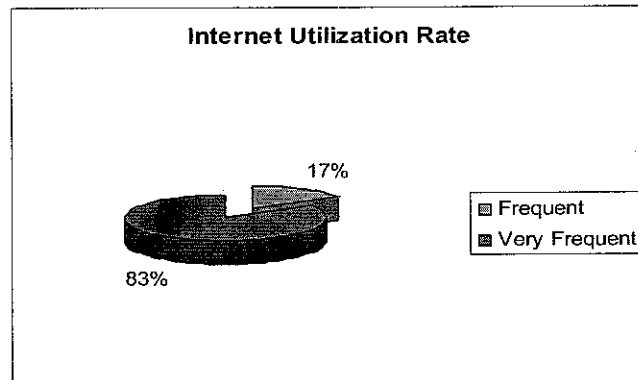


Figure 7: Internet Utilization Rate

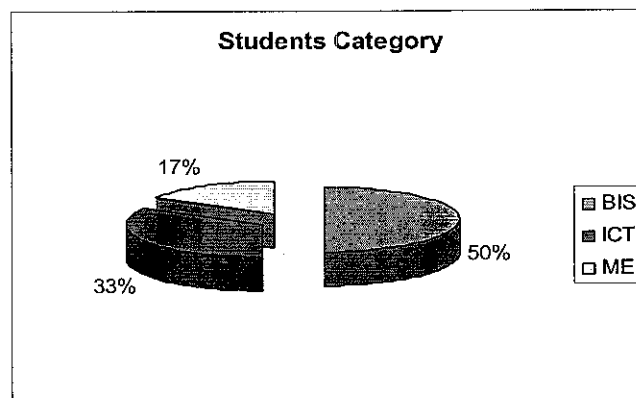
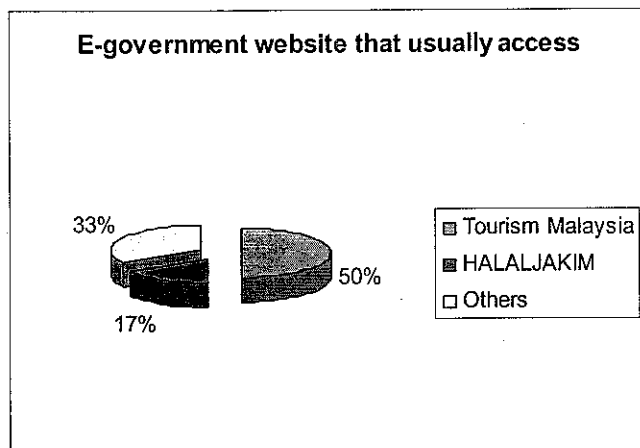
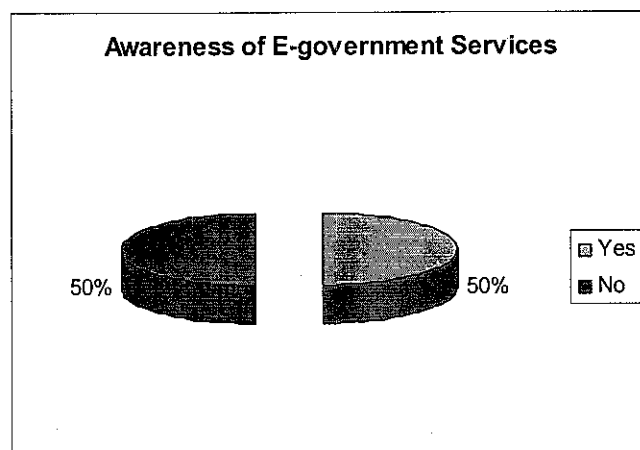


Figure 8: Students Category



**Figure 9: E-government website that usually access**



**Figure 10: Awareness of E-government Services**

## 4.6 Test Results

### 4.6.1 Task Scenario Design Timing Results:

#### Timing Results (Part A)

Test Subject	Scenario 1 (5 minutes)	Scenario 2 (5 minutes)	Scenario 3 (5 minutes)	Scenario 4 (5 minutes)	Total Time (20 min)
Test Subject 1	4:00	5:00	4:00	4:00	17:00
Test Subject 2	4:00	4:00	3:00	2:00	13:00
Test Subject 3	2:00	3:00	5:00	4:00	15:00
Test Subject 4	5:00	4:00	3:00	4:00	16:00
Test Subject 5	3:00	3:00	4:00	5:00	15:00
Test Subject 6	4:00	3:00	4:00	4:00	15:00

**Table 1: Timing Results Part A (Original Website)**

Table 1 shows the timing result taken for the task scenario for original website of HALALJAKIM. There are 6 participants involved in this usability testing. It was held at Computer Lab in Building 2 at Universiti Teknologi Petronas. The main objective of this activity is to describe the amount of time test subjects spent completing scenarios. From this table, author concludes that most of the test subject takes time to complete the task even though all of them manage to complete it on time.

**4.6.2 Task Scenario Question Rating (Part A)**

	User 1	User 2	User 3	User 4	User 5	User 6
<b><u>Scenario 1</u></b>						
Question 1	3/7	3/7	4/7	5/7	4/7	4/7
Question 2	4/7	3/7	4/7	4/7	3/7	2/7
<b><u>Scenario 2</u></b>						
Question 1	3/7	4/7	3/7	4/7	3/7	4/7
Question 2	3/7	3/7	3/7	4/7	3/7	2/7
<b><u>Scenario 3</u></b>						
Question 1	4/7	3/7	4/7	4/7	4/7	4/7
Question 2	4/7	3/7	3/7	4/7	3/7	3/7
<b><u>Scenario 4</u></b>						
Question 1	4/7	3/7	3/7	4/7	4/7	4/7
Question 2	4/7	3/7	4/7	4/7	3/7	3/7

**Table 2: Task Scenario Question Rating Part A (Original Website)**

Table 2 shows the results of the task scenario question rating. Most of the test subjects give a low rating and average marks for each question. Basically the question is about the opinion of the test subjects about the feel and look and clarity of communication of the websites where the questions can be refer at **Attachment 1**.

#### 4.6.3 Timing Results (Part B)

Test Subject	Scenario 1 ( 5 minutes)	Scenario 2 ( 5 minutes)	Scenario 3 ( 5 minutes)	Scenario 4 ( 5 minutes)	Total Time ( 20 minutes)
Test Subject 1	2:00	3:00	3:00	3:00	11:00
Test Subject 2	3:00	2:00	2:00	1:00	8:00
Test Subject 3	2:00	3:00	2:00	2:00	9:00
Test Subject 4	2:00	3:00	2:00	3:00	10:00
Test Subject 5	2:00	3:00	2:00	3:00	10:00
Test Subject 6	2:00	2:00	3:00	3:00	10:00

**Table 3: Timing Results Part B (New website Design)**

Table 3 shows the timing results for the new design of the HALALJAKIM website. The results show the improvement of the time taken for the timing results of part B. All participants manage to complete the task much faster than the previous usability testing in Part A. This shows that the new design of the website usable for the user.



#### 4.6.4 Task Scenario Question Rating (Part B)

	User 1	User 2	User 3	User 4	User 5	User 6
<b><u>Scenario 1</u></b>						
Question 1	5/7	5/7	6/7	5/7	4/7	5/7
Question 2	6/7	6/7	5/7	5/7	6/7	6/7
<b><u>Scenario 2</u></b>						
Question 1	6/7	5/7	5/7	6/7	6/7	6/7
Question 2	5/7	5/7	6/7	6/7	5/7	5/7
<b><u>Scenario 3</u></b>						
Question 1	5/7	6/7	5/7	5/7	4/7	4/7
Question 2	6/7	6/7	5/7	6/7	6/7	5/7
<b><u>Scenario 4</u></b>						
Question 1	5/7	5/7	6/7	5/7	4/7	5/7
Question 2	6/7	6/7	6/7	6/7	6/7	5/7

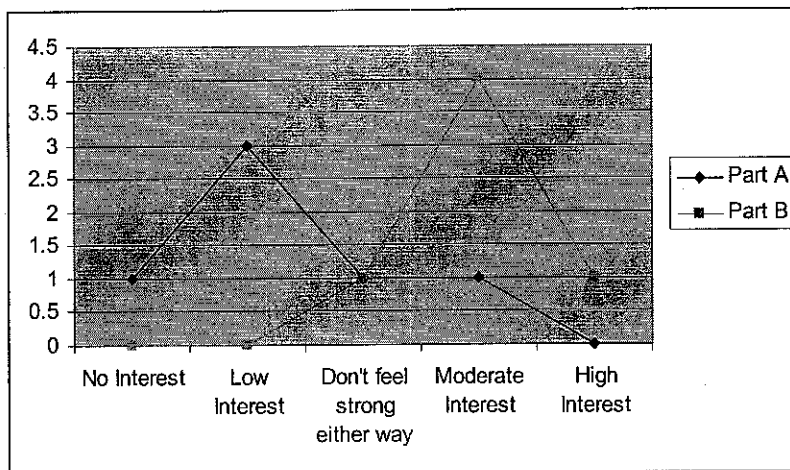
**Table 4: Task Scenario Question Rating Part B (New website design)**

Table 4 shows the results of the task scenario question rating for Part B. From the results, it shows that users give a positive feedback for the new website design. There are a lot of improvement author make for the new website design. This table shows that all the users satisfied for the changes.

#### 4.7 Feedback on post-test questionnaires

Feedback on post-questionnaires for both Part A(Original website) and Part B(New website design).

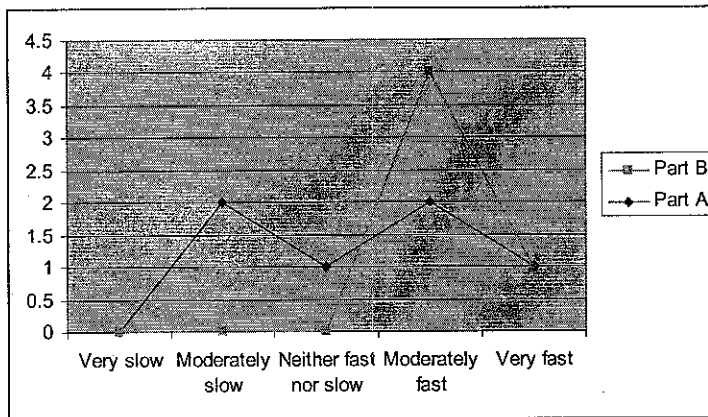
1) On the following scale, rate your need for / interest in having 'HALAL' information.



**Figure 11: Summary of Need/Interest in having 'HALAL' information**

This question is about the rating of the interest the need of information among the test subjects. Most of them rates low interest for the original websites. But the results change for the new websites where the graph shows the improvement of interest among the test subjects.

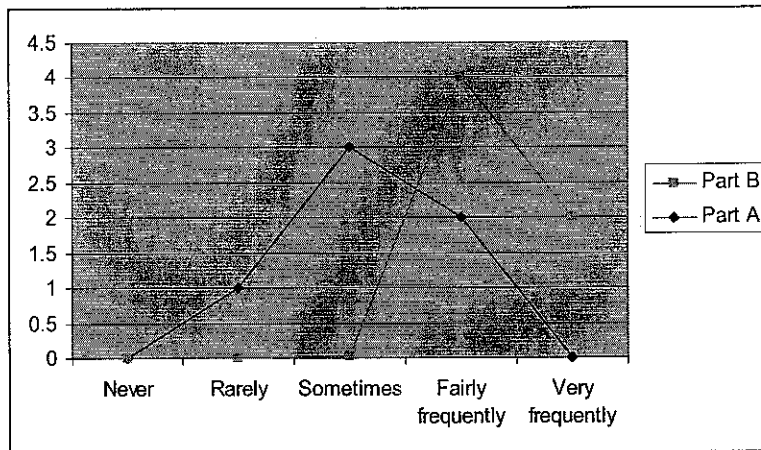
2) On the following scale, rate your impression of HALALJAKIM speed and responsiveness.



**Figure 12: Summary of speed and responsiveness**

This question is about the speed and responsiveness of the homepage of the HalalJakim website. It is important to rate as it is one of the usability criteria. The graph shows the conclusion for the results between Part A and Part B. There are a lot of improvement for the new website speed and responsiveness.

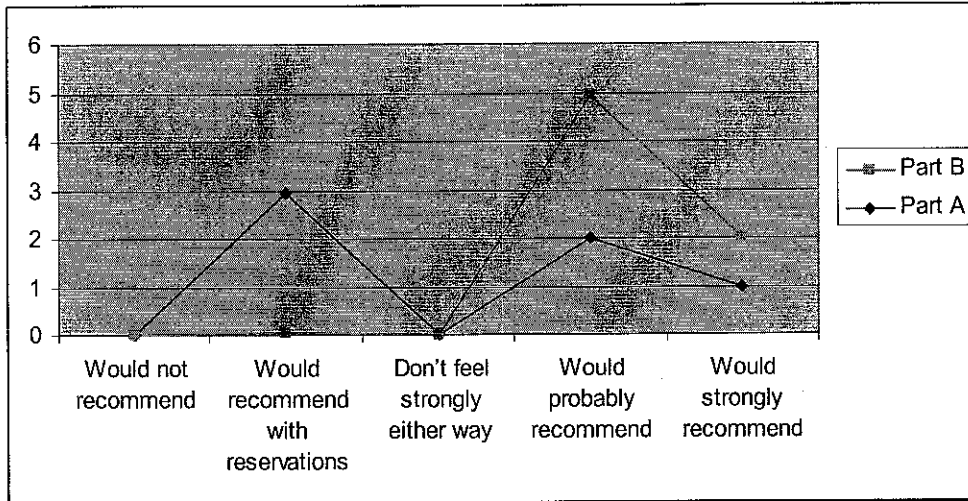
3) Will you use HALALJAKIM website as your guide to get information about halal information in the future?



**Figure 13: Summary of usable of the information in HalalJakim website**

This question asking the test subjects whether they will use HalalJakim website as their guideline for searching ‘Halal’ information in the future. For the Part A, most of the test subjects still not aware about the existing of the e-government HalalJakim website. And this situation makes them low response about it. But, for the new design, they are giving positive feedback because they’re already aware about the websites. Author found that this usability studies give an advantage to the HalalJakim website to be well known among the citizens.

4) On the following scale, rate how highly you would recommend HALALJAKIM website to your friends and associates.



**Figure 14: Summary of recommended of the website**

This question wants to know whether the test subjects will highly recommend this websites to the other citizens. As from the graph, most of them will highly recommend this website to their friends and associates after the improvement of the websites in Part B.

**Following are free-form comments from the test subjects (Part A)**

<p><b>What did you like MOST about HALALJAKIM?</b></p>	<ol style="list-style-type: none"> <li>1. Test subject #1: a lot of information of Halal products</li> <li>2. Test subject #2: -</li> <li>3. Test subject #3: -</li> <li>4. Test subject #4: we can search halal product faster.</li> <li>5. Test subject #5: -</li> <li>6. Test subject #6: The related article is good.</li> </ol>
<p><b>What did you like LEAST about HALALJAKIM?</b></p>	<ol style="list-style-type: none"> <li>1. Test subject #1: The color theme</li> <li>2. Test subject #2: 'Info Halal' box should be simple, don't too wordy</li> <li>3. Test subject #3: not eye catchy</li> <li>4. Test subject #4: the related article should be organized.</li> <li>5. Test subject #5: It seemed to take a long time to get from one section to another.</li> <li>6. Test subject #6: Pengumuman box should be more alert</li> </ol>
<p><b>What would you change about HALALJAKIM?</b></p>	<ol style="list-style-type: none"> <li>1. Test subject #1: Get good pictures on the homepage</li> <li>2. Test subject #2: organized the box in appropriate order</li> <li>3. Test subject #3: make the related article in the middle of the page, so it is easy to find.</li> <li>4. Test subject #4: the layout.</li> <li>5. Test subject #5: Maybe the layout and design.</li> <li>6. Test subject #6: clarity of communication</li> </ol>
<p><b>Optional comments</b></p>	<p><b>Please add any other comments about HALALJAKIM that might be useful in helping HALALJAKIM improve its website.</b></p>
	<ol style="list-style-type: none"> <li>1. Test subject #2: Change the color theme, it look dull.</li> <li>2. Test subject #3: Make it simple. The length is too long</li> <li>3. Test subject #5: The flow (or ease of going from one section to another) could use some improvement. Not all sections</li> </ol>

### **Positive Feedback Summary**

Test subjects offered several positive comments about HALALJAKIM.

They liked:

- a lot of information of Halal products the ease
- can search halal product faster
- a lot of informative article

### **Critical Feedback Summary**

Some of the test subjects commented on issues they would like to see improved in HALALJAKIM. They criticized:

- The wordiness of the overall webpage.
- The limited amount of graphics. Some users commented that the site should be made more visually attractive.
- The slow response time (this from users using HALALJAKIM during high-traffic times)
- The "wordiness" of Info Halal box.
- The length of the website is too long, takes time for the user to search related information.
- The advertisement is not organized, look too crowded.

**Following are free-form comments from the test subjects (Part B)**

<p><b>What did you like MOST about HALALJAKIM?</b></p>	<p>Test subject #1: The color theme                  Test subject #2: easy to navigate information                  Test subject #3: attractive homepage                  Test subject #4: faster to find information                  Test subject #5: simple and well arrange menu                  Test subject #6: The related article is good.</p>
<p><b>What did you like LEAST about HALALJAKIM?</b></p>	<p>Test subject #1: -                  Test subject #2: advertisement should be minimize                  Test subject #3: -                  Test subject #4: -                  Test subject #5: -                  Test subject #6: -</p>
<p><b>What would you change about HALALJAKIM?</b></p>	<p>Test subject #1: the speed                  Test subject #2: Not Sure                  Test subject #3: maybe can be more attractive such like using Flash                  Test subject #4: -                  Test subject #5: Maybe design                  Test subject #6: -</p>
<p><b>Optional comments</b></p>	<p>Please add any other comments about HALALJAKIM that might be useful in helping HALALJAKIM improve its website.</p>
	<p>Test subject #1: No Comment                  Test subject #3: none.                  Test subject #4: No Comment.</p>

**Positive Feedback Summary**

Test subjects offered several positive comments about HALALJAKIM. They liked:

- A color theme is eye catchy
- Easy to navigate information
- Simple design and yet easy to use
- Attractive homepage



## 4.8 The Website

### 4.8.1 Print Screen

This is the print screen of the original website and new website design of HALALJAKIM. Usability finding in 4.9 shows the details of changes made by the author by the guideline of Jakob Nielsen.

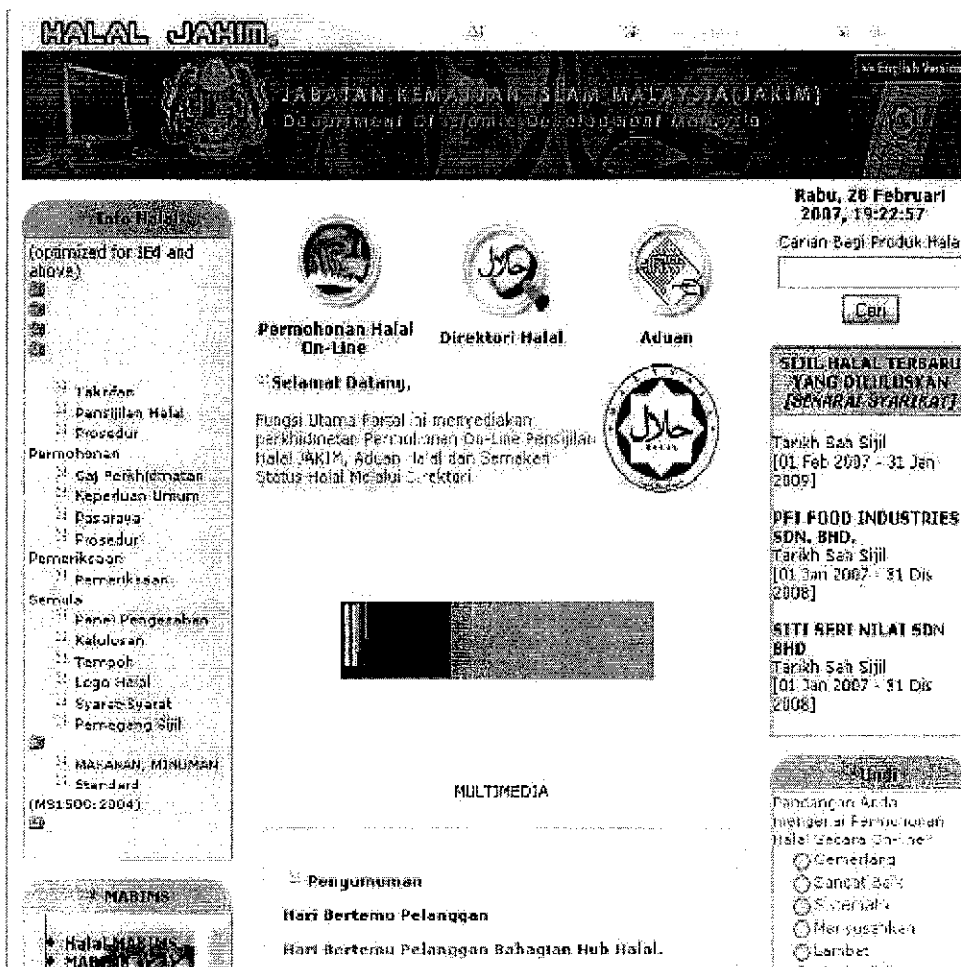




Figure 15: Original HALALJAKIM website.



## JABATAN KEMAJUAN ISLAM MALAYSIA (JAKIM)

Department of Islamic Development Malaysia



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UTAMA
PERMOHONAN ONLINE
DIREKTORI HALAL
ADUAN

**INFO HALAL**

UCAPAN KPJAKIM

LOGO HALAL JAKIM

PROMO E-HALAL

PROSEDUR PENSIJILAN

GARIS PANDUAN

AKTA-AKTA BERKAITAN

---

**MAKING**

LPPOM-MUI

HALAL MUIS

INDOHALAL.COM

---

**LAIN-LAIN INFO**

Fatwa Halal

Buletin Pilihan

Artikel Pilihan

Hyperangkai


Galeri Foto

---

**INGIN**

meningkatkan kredibiliti HALAL di hotel?

Selamat Berdagang  
Fungsi Utama Portal ini menyediakan perkhidmatan Permohonan On-Line Pensiijilan Halal JAKIM, Aduaa Halal dan Semakua Status Halal Melalui direktori



**PENGUMUMAN**

**Kenyataan JAKIM Mengenai Ubat Gigi Colgate**

JAKIM memparakuai ubat gigi Colgate yang disartikan Halal oleh badan-badan Islam yang beriktiraf oleh JAKIM

**Bursa Saham Kuala Lumpur**

Semua syarikat pengeluar makanan yang hendak disenaraikan di Bursa Saham Kuala Lumpur (BSKL) perlu memiliki sijil halal JAKIM

Lagi:

**KENYATAAN MEDIA**

**Portal Halal JAKIM versi 2006 dilancar**

Verti kali ini nampak lebih seragam dan sistematik supaya ia mamberikan perkhidmatan yang mesra pengguna "User Friendly" kepada pengguna-pengguna e-halal dan umat Islam yang akses ke portal halal JAKIM.

Lagi:

Carian Bagi Produk Halal

**SIJIL HALAL BARU YANG DILULUSKAN**

Senarai terkini syarikat yang mendapat sijil pengesahan halal daripada JAKIM

Sila Klik Sini

---

**UNDI**

Pandangan Anda mengenai Perkhidmatan Halal Secara On-line?


- Cemerlang
- Sangat Baik
- Sistematik
- Menyusahkan
- Lambat
- Tidak efisien

Papar Undian

**STATISTIK**

**SMS HALAL JAKIM**

Fatwa Berkaitan Halal (About Halal)



**FOMCA**

Kepatuhan Pengguna Islam Malaysia

Suaran Lazim
Glosari
Badan Islam

Hak Cipta Terpelihara www.halaljakim.gov.my  
Statistik Pelawat [817042]

**PENAFIAN**

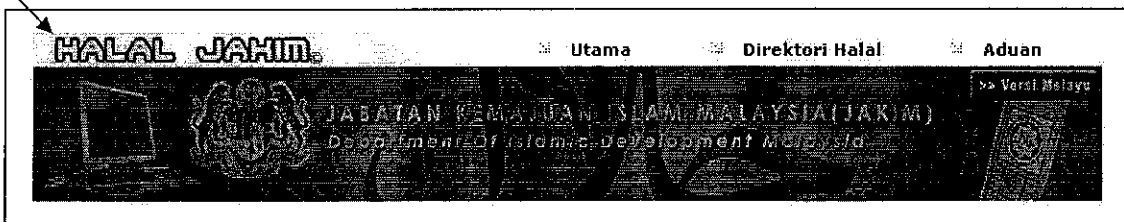
Kerajaan dan Jabatan Kemajuan Islam Malaysia tidak bertanggungjawab atas kehilangan, kerugian atau kerosakan disebabkan penggunaan mana-mana maklumat yang disediakan melalui portal ini, termasuk maklumat yang disalurkan melalui perkhidmatan pesanan ringkas (SMS).

Figure 16: New prototype design HALALJAKIM homepage

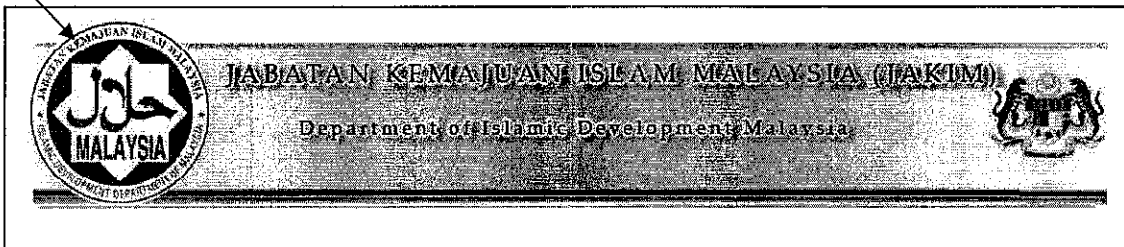
## 4.9 Usability Finding

### Finding [#1] – Recognition rather than recall (rules 6)

#### Original website



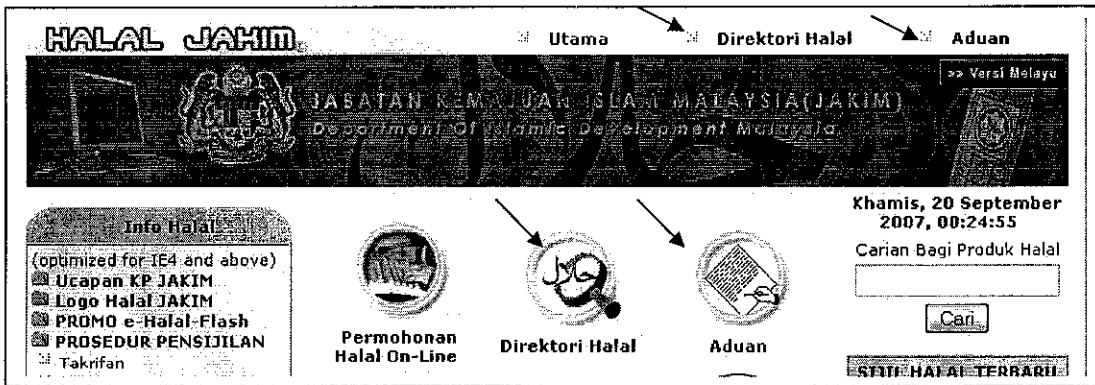
#### New website design



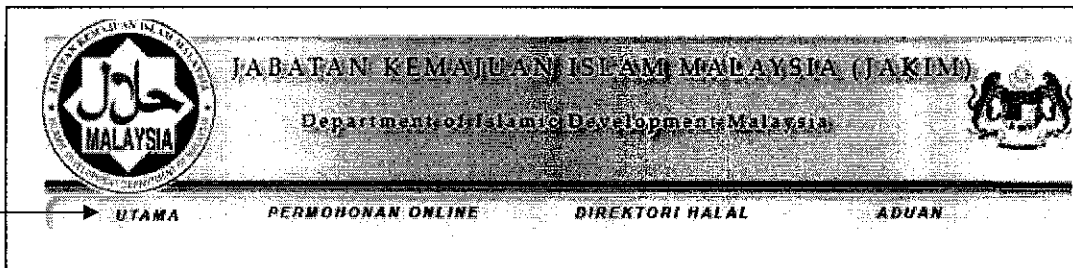
Supporting Evidence	Recommendations/Comments
<p>Recognition rather than recall – Jakob Nielsen rules 6.</p>	<p>Minimize the user’s memory load by making objects, actions and options visible.</p> <p>The arrow above shows that original website use words (HalalJakim) for the trademark of this website. But, author change it to HalalJakim logo as it is easier for the user recognize the logo stamp as the trademark of the website.</p>

**Finding [#2] – Consistency and standards (rules 4)**

**Original website**



**New website design**



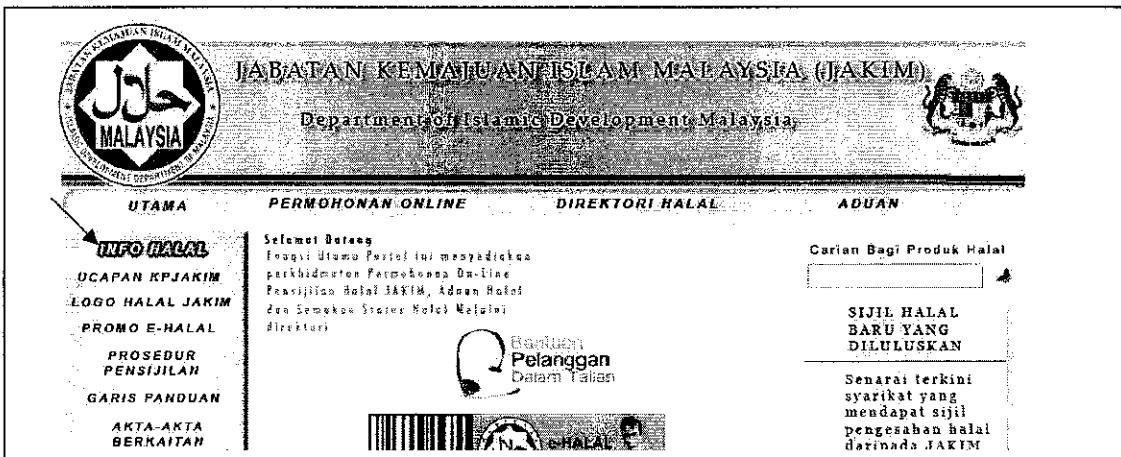
Supporting Evidence	Recommendations/Comments
<p>Consistency and standards – Jakob Nielsen rules 4</p>	<p>Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions. As this menu has to be standardizing for all the sub page of HalalJakim websites.</p>

### Finding [#3] – Flexibility and efficiency of use (rules 7)

#### Original Website



#### New website design



Supporting Evidence	Recommendations/Comments
Flexibility and efficiency of use – Jakob Nielsen rules 7	<p>Accelerators:unseen by the novice user: mayoften speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions. As we can see in the Info Halal box at original website, the information is wordy and lengthy. For the normal users they might not really interested with the ‘Prosedur Pensijilan’ as from the survey mostly the participants are the normal user. They want to search for the information faster rather than searching for a long time. So, for the new website design, author creates minimalist design and only put on the main information. For the user wants to know more about ‘Prosedur Pensijilan’, they just click the word and it will be linked to the sub page. This will make the homepage look flexible and efficient.</p>

## Finding [#4] – Aesthetic and minimalist design (rules 8)

### Original Website

**JAKIM**

**Bursa Saham Kuala Lumpur**  
Semua syarikat pengeluar makanan yang hendak disenaraikan di Bursa Saham Kuala Lumpur (BSKL) perlu memiliki sijil halal JAKIM

**Maklumat e-Halal Guna SMS Dilancar**  
Mulai 6 Februari 2006, orang ramai boleh menyemak status halal sesuatu produk di pasaran menggunakan Khidmat Pesanan Ringkas (SMS)

**PENGESAHAN HALAL MENERUSI SMS**  
Tarikh : 22 Sept 2005 Tempat : Pusat Konvensyen Antarabangsa Putrajaya (PICC) Masa : 8:00 pagi  
**Kertas Kerja JAKIM**  
**Kertas Kerja FMM**

**LAGI**

**Kenyataan Media**

**Portal Halal JAKIM versi 2006 dilancar**  
Versi kali ini nampak lebih seragam dan sistematik supaya ia memberikan perkhidmatan yang mesra pengguna "User Friendly" kepada pengguna-pengguna e-halal dan umat Islam yang akses ke portal halal JAKIM.

**Pemberian logo halal diselaras**  
Semua negeri setuju arahan PM guna logo dikeluarkan Jakim

**STATISTIK**

Bumiputera		
--> Multinasional	102	28
--> Ind. Kecil Dan Sederhana	522	35
--> Industri Kecil	689	40
Non-Bumiputera		
--> Multinasional	259	72
--> Ind. Kecil Dan Sederhana	970	65
--> Industri Kecil	1051	60
Jenis Permohonan		
Produk	4118	
Premis	732	
Rumah Sembelih	90	

**Artikel Pilihan**  
Buletin Halal  
Fatwa Halal  
Badan Islam  
Soalan Lazim  
Glosari  
Hiperrangkar  
Galeri Foto

Bantuan Pelanggan Dalam Talian

### New website design

**LAGI-LAGI INFO**

- Fatwa Halal
- Buletin Pilihan
- Artikel Pilihan
- Hyperangkar
- Galeri Foto

**JAKIM** merupakan alat pengawal selia yang disahkan Halal oleh badan-badan Islam yang diiktiraf oleh JAKIM.

**Bursa Saham Kuala Lumpur**  
Semua syarikat pengeluar makanan yang hendak disenaraikan di Bursa Saham Kuala Lumpur (BSKL) perlu memiliki sijil halal JAKIM

**KENYATAAN MEDIA**

**Portal Halal JAKIM versi 2006 dilancar**  
Versi kali ini nampak lebih seragam dan sistematik supaya ia memberikan perkhidmatan yang mesra pengguna "User Friendly" kepada pengguna-pengguna e-halal dan umat Islam yang akses ke portal halal JAKIM.

**LAGI**

**STATISTIK**

Pandangan Anda mengenai Permohonan Halal Secara On-line?

- Cemerlang
- Sangat Baik
- Sistematik
- Menyusahkan
- Lambat
- Tidak efisien

**UNDI**

Papar Tindakan

**Soalan Lazim**   **Glosari**   **Badan Islam**

<b>Supporting Evidence</b>	<b>Recommendations/Comments</b>
Aesthetic and minimalist design – Jakob Nielsen rules 8	<p>Dialogues should not contain information which is irrelevant and rarely needed. Every extra unit of information competes with the relevant units of information diminishes their relative visibility. There are 3 arrows pointed in the original website which the most critical feedback from the users. Those boxes of information are not well organized where it makes the website too lengthy instead of simple and minimalist design for the ease of use. For the arrow number 1, it is the advertisement of HalalJakim. Author has changed the position of the advertisement at the bottom of the website because it is less informative from the box of arrow number 3. As from the users feedback arrow number 3 boxes is the most information needed when users access this website, so it has to be easy to recognized, and author has changed it to the new position as in the new website design box above. As well as the arrow number 2 which is Statistic box. For the users interested want to know more about the statistic they just have to click and will be linked to the page.</p>



## Finding [#5] – Match between system and the real world (rules 2)

### Original website

<ul style="list-style-type: none"> <li>PROSEDUR PENSIJILAN             <ul style="list-style-type: none"> <li>Takrifan</li> <li>Pensijilan Halal</li> <li>Prosedur Permohonan</li> <li>Caj Perkhidmatan</li> <li>Keperluan Umum</li> <li>Pasaraya</li> <li>Prosedur Pemeriksaan</li> <li>Pemeriksaan Semula</li> <li>Panel Pengesahan</li> <li>Kelulusan</li> <li>Tempoh</li> <li>Logo Halal</li> <li>Syarat-Syarat</li> <li>Pemegang Sijil</li> </ul> </li> <li>GARIS PANDUAN             <ul style="list-style-type: none"> <li>MAKANAN, MINUMAN</li> <li>Standard (MS1500:2004)</li> </ul> </li> <li>AKTA-AKTA BERKAITAN</li> </ul>	<h4>PROSEDUR PERMOHONAN</h4> <p>Pemohon yang layak memohon Sijil Pengesahan Halal dikategorikan seperti berikut:</p> <ul style="list-style-type: none"> <li>-pengeluar/ pengilang produk (manufacturer/ producer);</li> <li>-pedegar/penjual (distributor/ trader);</li> <li>-pengeluar sub-kontrak (sub-contract manufacturer);</li> <li>-pembungkusan semula (repacking);</li> <li>-premis makanan (food premise); dan</li> <li>-rumah sembelih (abattoir/slaughter house).</li> </ul> <p>Permohonan Sijil Pengesahan Halal bagi pasaran di peringkat nasional dan antarabangsa hendaklah memohon secara terus kepada JAKIM.</p> <p>Permohonan Sijil Pengesahan Halal bagi pasaran di peringkat pasaran tempatan, permohonan hendaklah dipohon terus kepada JAIN/MAIN mana yang berkenaan.</p> <p>Borang permohonan boleh didapati dan dikembalikan ke alamat seperti di bawah:</p> <p><b>Bahagian Kajian Makanan dan Barangan Gunaan Islam Jabatan Kemajuan Islam Malaysia Ara 1, Blok D7, Parcel D, Pusat Pentadbiran Kerajaan Persekutuan, 62519 Putrajaya.</b></p> <p>Atau di laman web:</p>
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### New website design

<b>Supporting Evidence</b>	<b>Recommendations/Comments</b>
Match between system and the real world – Jakob Nielsen rules 2	The system should speak the users' language, with words, phrases and concepts familiar to the user. In this usability finding #5, author find that the sub page of the 'Prosedur Permohonan' is not well organized where the phrases is not in order, the paragraph looks not nice, and looks empty. Author has changed the design of this page by creating an appropriate box so that the information looks well organized to read, and easy to navigate as well as easy to print for hardcopy.

## CHAPTER 5

### CONCLUSION AND RECOMMENDATION

#### 5.0 Conclusion

As a conclusion, Human Computer Interaction (HCI) is very important to be applied as a guideline to build a website. Even though the user interface that following HCI principle is not perfect, but they have facilitated progress in many fields such as medical care, education, management, science, and engineering. They have also spawned consumer success stories in e-commerce and why not apply it in e-government sectors? It will be a helpful tool for the government to give meaningful information to their citizens. Many of the problems with the website could have been discovered through earlier testing and through iterative testing at different stages in the application's development. Hopefully this project can improve e-government services in terms of interface and can help them to increase their popularity among citizens. There are many citizens still not aware of the existing of HALALJAKIM website.

#### 5.1 Recommendation

As a recommendation from this project, it is advisable for the e-government sector to apply and consider the rules of Human Interaction Design in developing a good and satisfied website. As for this project author has applied Jakob Nielsen rules as a guideline to produce a new prototype website for HALALJAKIM service.

In the future, hopefully that the website developer will enhance the website as goes by with new technology so citizens will keep updated.

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## Appendices

## Attachment 1 – Task Scenario Questionnaire Design

### Scenario 1 Questions

1. Think about the task that you just completed. Were there things you particularly liked? Were there things that made the experience difficult? Please tell me how much you agree with the following statement?

Overall, I am satisfied with how easy explore the website:

Not Applicable	Strongly Disagree			Neutral		Strongly Agree	
	<=====	=====	=====	=====	=====	=====	=====>
N/A	1	2	3	4	5	6	7

2. Overall, I found the screen text, such as text in dialogs, tool tips, and menu items helpful and easy to understand.

Not Applicable	Strongly Disagree			Neutral		Strongly Agree	
	<=====	=====	=====	=====	=====	=====	=====>
N/A	1	2	3	4	5	6	7

**Scenario 2 Questions :**

1. Think about the task that you just completed: search for latest event in the website.  
How easy your eye catch the information

Please tell me how much you agree with the following statement:

Overall, I am satisfied with how easy to search the latest event and get the information I want.

Not Applicable	Strongly Disagree			Neutral		Strongly Agree	
	<=====	=====	=====	=====	=====	=====	=====>
N/A	1	2	3	4	5	6	7

2. Overall, I found the screen text, such as text in dialogs, and menu items helpful and easy to understand.

Not Applicable	Strongly Disagree			Neutral		Strongly Agree	
	<=====	=====	=====	=====	=====	=====	=====>
N/A	1	2	3	4	5	6	7



### Scenario 3 Questions

1. Think about the tasks you just completed: Find 'Fatwa Halal' word. How easy to get there? Did you get all the information you need?

Please tell me how much you agree with the following statements:

Overall, I am satisfied with how easy it was to understand how to find the 'Fatwa Halal' word.

<b>Not Applicable</b>	<b>Strongly Disagree</b>	<b>Neutral</b>	<b>Strongly Agree</b>				
	<=====	=====	=====>				
N/A	1	2	3	4	5	6	7

2. Overall, I found the screen text, such as text in dialogs, and menu items helpful and easy to understand.

<b>Not Applicable</b>	<b>Strongly Disagree</b>	<b>Neutral</b>	<b>Strongly Agree</b>				
	<=====	=====	=====>				
N/A	1	2	3	4	5	6	7

### **Scenario 4 Question**

1. Think about the tasks you just completed: access Info Halal box. How do you feel? Is the page attractive and catchy? How they arrange the words? Can you easily understand what they want to deliver?

Please tell me how much you agree with the following statements:

Overall, I am satisfied with how easy to find the text Ucapan Kp Jakim, Logo Halal, Prosedur Permohonan, Akta-Akta Berkaitan, and Garis Panduan.

<b>Not Applicable</b>	<b>Strongly Disagree</b>	<b>Neutral</b>	<b>Strongly Agree</b>				
	<=====	=====	=====>				
N/A	1	2	3	4	5	6	7

2. Overall, I found the pages are attractive and easy to understand the information written.

<b>Not Applicable</b>	<b>Strongly Disagree</b>	<b>Neutral</b>	<b>Strongly Agree</b>				
	<=====	=====	=====>				
N/A	1	2	3	4	5	6	7

## Attachment 2 – Pre-test questionnaire

### Pre-Test Questionnaire

**Thank you for considering being a volunteer for our Usability Test. We will work to make sure the test environment is pleasant and fun for you. The results from our Usability Test will be used to help improve current e-government website.**

Please answer the following questions. We will use your answers to determine if you will be a participant in our Usability Test.

**Thank you again for your consideration.**

**Name:** \_\_\_\_\_

**Home Phone:** \_\_\_\_\_

**Work Phone:** \_\_\_\_\_

**Date** : \_\_\_\_\_

**Please tick (/) in the box given.**

**Age:**

15-20     21-30     31-40     41-50     51 or above

**Sex:**  Male     Female

**Race:**     Malay     Chinese     India     Others

#### 1. Employment category

Student     Education     Others (Please specific)

Business     Banking or finance    \_\_\_\_\_

#### 2. How frequent do you utilize Internet connection?

Never

Rarely

Moderately

Frequent

Very frequent

**3. How long have you been using personal computers?**

- 0-3 months
- 4-6 months
- 7-9 months
- 10-12 months
- More than 12 months

**4. Have you ever access to e-government website?**

- Yes
- No

If you answered “no”, please proceed to question 6.

**5. Which e-government website that you usually access?**

- Ministry of Tourism Malaysia
- HALALJAKIM
- Education
- Other(s) specify \_\_\_\_\_

**6. Have you ever browse to the HALALJAKIM website?**

- Yes
- No

**7. For what purpose you browse the HALALJAKIM website?**

\_\_\_\_\_

**8. Do you think the current HALALJAKIM website need improvement?**

\_\_\_\_\_

**9. Why? In which area it should be improved?**

\_\_\_\_\_

**Attachment 3 – Post-test questionnaire design**

**1) On the following scale, rate your need for / interest in having ‘HALAL’ information.**

Test Subject	No interest / need	Low interest / need	Don't feel strongly either way	Moderate interest / need	High interest / need
#1					
#2					
#3					
#4					
#5					
#6					

**2) On the following scale, rate your impression of HALALJAKIM speed and responsiveness.**

Test Subject	Very slow	Moderately slow	Neither fast nor slow	Moderately fast	Very fast
#1					
#2					
#3					
#4					
#5					
#6					

**3) Will you use HALALJAKIM website as your guide to get information about halal matters in the future?**

Test Subject	Never	Rarely	Sometimes	Fairly frequently	Very frequently
#1					
#2					
#3					
#4					
#5					
#6					

**4) On the following scale, rate how highly you would recommend HALALJAKIM website to your friends and associates.**

Test Subject	Would NOT recommend	Would recommend with reservations	Don't feel strongly either way	Would probably recommend	Would strongly recommend
#1					
#2					
#3					
#4					
#5					
#6					

**5) What did you like MOST about HALALJAKIM?**

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**6) What did you like LEAST about HALALJAKIM?**

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**7) What would you change about HALALJAKIM?**

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**8) Any other comments?**

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