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Themes

Quality, Competitiveness, and Value-Added Services in Solving Predetermined Global Crisis

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FOREWORD

This issue is published in line with the third International Seminar on Industrial Engineering and Management (3rd The articles cover a broad ISIEM). spectrum of topics including Quality Function Deployment, Decision Support and Artificial Intelligent. System Ergonomics, Supply Chain Management, Production System, Operation Research, and Industrial Management. The articles provide an overview of critical research issues reflecting on past achievements and future challenges. Those papers were selected from 165 abstracts. statistics shows the high competition to get published on this proceeding.

This issue and seminar become special as more delegates come and join from various country as well as universities. We host 86 delegates both from abroad and local. We are very happy as we gather more than thrice delegates this year compare to previous year. This be happened since universities join as committee. First and second ISIEM are hosted only with three universities. namely Trisakti. Gunadarma, and Indonusa Esa Unggul Universities. This year event, It's hosted by six universities, i.e. Gunadarma, Trisakti, Indonusa Esa Unggul, Bina Nusantara, Atma Jaya Catholic, and Petra Christian Universities. This becomes evident to us that with cooperation we will succeed.

It is then our expectation so that to the future more universities join us as organizing committee. In this occasion, let us give special thank to Prof. Dr. E.h. Dr.-Ing. habil. Josef Schlattmann from Hamburg University of Technology, Germany. Your contribution to this seminar as reviewer, and as keynote speaker makes this event valuable. Allow us also to thank Prof. Emeritus Adnyana Manuaba and Ir. I. Made Dana M. Tangkas from Direktur Teknik dan PIC. Tovata Manufacturing Indonesia. for contribution as keynote speakers. We are also grateful to all reviewers, for their commitment, effort and dedication in undertaking the task of reviewing all of the abstracts and full papers. Reviewing large number а submissions in a relatively short time frame is always challenging. their help and dedication, it would not be possible to produce this proceeding in such a short time frame. appreciate all members of committees (advisory, steering, and organizing committees) for mutual efforts and invaluable contribution for the success of seminar.

As closing remarks, Let's say thanks to the Lord Almighty God for all His blessing on us.

Dr. Ir. Hotniar Siringoringo, M.Sc. Chair

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DETERMINE QUALITY MANAGEMENT FACTOR OF LIBRARY WEBSITE

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Abstract

The needs of information in the globalization gets higher, therefore need a break through in order to get information easily. Along with that matter, many methods are used to develop knowledge and information for public which are followed by the information technology in the management of knowledge. In the education, library is the source of information which makes the users get refrence of knowledge completely, easily, accurately, and fast. The use of library website is a part of the information system. This research has a purpose which is measuring the library website quality by the users. Dimension of measurement which is used in this research are 1)information quality 2) interaction and quality of information system as well as 3)the usability from human computer interaction. The formation of dimension is known as the webqual analysis (Bames and Vidgen, 2003). This research is conducted by distributing questionare to the users of university library (university students) in the amount of 150 respondent, factor of analysis fund which is used in order to get factor which plays an important role in the use and quality of the library website.

Key words: knowledge management, information technology, web quality

1. INTRODUCTION

Information Communication Technology (ICT) is a part of knowledge and technology which is generally can be defined as every technology which is related to the taking. collecting, manufacturing. distributing, and serving the information. That definition means all the hardware, software. internal contents. infrastructure of computer as well telecommunication. The effects of the information communication technology toward the other aspects definitely need a long period of time to be discussed. In this writing, the relation between ICT and studying process is focused more in comparison with the relation between itself with other aspects. Without underestimating the effects of ICT toward the other aspects. the education receives more benefits in relation to the ICT in manufacturing and distributing the information.

The use of ICT in the education in Indonesia has an extremely long history. The initiative of conducting education radio and education television can be considered as the endeavors to distribute the information to the department of education which scatters

around the country. These are the attempts maximize the technology effects for the education process-teaching learning process in public. The focal weakness of the radio as well as television of education is there is no interaction between the 'teachers' and 'students' at that current moment. Broadcast is featured as 'one way', from the speakers or facilitator to the students or listeners.

The introduction of computer with its ability process and serve the multimedia presentation (text, graphics, pictures. sounds. movie) gives and а opportunity to overcome the weakness which the radio and television education have. If the television can only give the information in one way (even worse if the presentation is about the chapters which are the products of recording), education based on internet technology gives the chance to interact well in a real time (synchrony) as well as delayed (asynchrony). The education based on internet might give a chance to the synchrony education to be the most prominent as the facilitators and the students are not required to be at the same place. One of the supporting systems which is

essential in any learning process and system

is library. It is also in the process of learning by e-learning, the availability of library in the form of e-library or digital library are the goal which surely should be met. The identification of the factors which affects the use or adoption from the use of library web is important to develop the library service which bases on internet. This research will use the Webqual Analysis as the theory framework. This research has an aim to find the effects from each and every part of Webqual Analysis toward the intensity of the used of web library.

2. LITERATURE REVIEW

Library is a media of providing the information which is in majority not finding the profits. In many practical in Indonesia, due to the feature of the library which has no aim to find profits thus the quality of the services to the users is not in the priority list. Working as long as not breaking the rules and regulations is an extremely minimal target and the low quality is the cases which frequently occur, this happens in library as well. The ultimate conception toward the government labors is very big.

According to Sulistyo Basuki, Library is a room, a part of a building or the building itself which is used to store or keep the books or other things which are published and ordinarily are kept in order and neatly arranged according to a certain method which will be used by the readers, and not for sales. In the definition of books as well as the text books, ordinary books, magazines, reports, pamphlets, proceeding, manuscript, music books, lots of media audiovisual such as film, slides, cassettes, microfilm, microfis, and microopaqu. Webster defines the library as the collection of books, manuscript which are used for the education, convenience and pleasure of digging more knowledge and refreshing (activity in spare time). It is compulsory for the librarians and library itself in Inconesia to be able to compete in the global environment. The successful of the organization in attempting to be involved in the global environment is affected by four factors which are:

- 1. The organization speed in responding the needs of consumers,
- 2. Personnel flexibility in adaptation to the changes of business environment, ability of studying brand new abilities, will to get into the new environment which has never been known,
- 3. Mix match between each organization with the stockholders to cater the needs of users,
- 4. Ability of the organization to create new products and process to fulfill the changes of consumers and users.

Basically, WebQual is developed as the media to measure the opinions of the users from the web site E-commerce quality. The instrument is in progress of development since the beginning of 1998 and has increased in the improvement process from different e-commerce and e-government area. WebQual is one of the methods or techniques to measure the quality of the website according to the perception of the last user. This method is the result of SERQUAL development which is frequently used previously in the service quality measurement. The instrument of the WebQual research is developed by Quality Function Development method (QFD), which means: "structured and discipline process which give intention for identification and carrying the customers' complaint through each step from products and/or development of service and application.

WebQual has been developed since 1998 and has experienced some interaction in the arrangement of dimension and 14 questions (inside the Barnes and Vidgen;2002). WebQual 3.0 is arranged according to the three research areas, which include:

- 1. Information and system information research quality. Information Quality is the quality from the site contents, whether the information is improper or not for the aim of the users such as accuracy, format, and onnection. (Barnes and Vidgen; 2002 inside Joshua Tarigan, 2008).
- 2. Interaction and service quality from research of system information quality. Service interaction quality is the quality from service interaction which is experienced by the users while they are investigating the site

deeper, which can be created with the trust and empathy, for the example of the issue from the security of transaction information. distributing personalization and communication to the site's owner. (Barnes and Vidgen; 2002 inside Joshua Tarigan, 2008)

Usability from human computer interaction. Usability is quality which is related to the site design, example of the performance, convenience usage, navigation and pictures which are transmitted to the users.

That usage perception consists of two parts, which are perception about the service quality which is felt (actual) with the goal level (ideal). Barnes and Vidgen (2003) conduct research by using the WebQual in order to measure the website quality which is manged by OECD (Organization Economic Cooperation and Development).

The high qualified website according to the users' perspectives can be seen from the actual service perception level which is high and the actual gap perception which is low. Model of high qualified website or WebQual was first time used for the Business school portal based on the factors such as convenience usage, experience, information and communication, as well as integration.

3. METHODOLOGY

Variables which will be investigated are: 1. Respondent profile, consist of gender, age, college/university, rank, faculty, major, level, has a personal computer, frequently used of internet, have an e-mail, has personal websites/sites, and area of internet. 2. Restricted variable is the questions which are three dimensions WebQual 3.0 which has been developed since 1998.

Table 1. Research Variable, Definition and Indicator.									
Varia	able	Definition Indicator							
Usal	bility	Quality which is related to the site design, as the example of performance, convenience usage, navigation and pictures which are transmitted to the users.	a. Receive the site which can be easily operated and studied. b. Understand and clear in the site interaction. c. Site is easily gotten to be explored. d. Site is easily used. e. Design is appropriate and adjusted with the site type.						
Infor	rmation Quality	Quality of the site contents, whether the information is improper or not for the users, such as accuracy, format, and connection.	 a. Give accurate information. b. Give reliable information. c. Give relevant information. d. Give the proper details of information. e. Giveunderstood information. 						
Serv	vice Interaction	Quality from service interaction which is experienced by users while they are investigating deeper, which is created with empathy & trust, as the issue example from security of transaction and information, distributing products, personalization and communication with the website owner.	a. Feel reliable and save to finish up the transaction b. Personal information is secured. c. Create personalization atmosphere. d. Easily to communicate with the organization.						

The measurement of constructor validity by using factor analysis and with the Principal Component Analysis method is a method of a factor creating a linear combination which is not connected from observed variable which has been completed with the Kaiser-Meyer-Olkin test (KMO) and Barlett, The next component defines a smaller potion progressively from variable value and all of it is not related to one another. Validity construct is one of the types of validity which denotes a research instrument is effective measurement from a particular construct or theoretic variable. Emory and Coaper (1991) in Farida and Hermana (2005) state several methods which are used to measure the validity construct which are coloration between research data with the available measurement method.

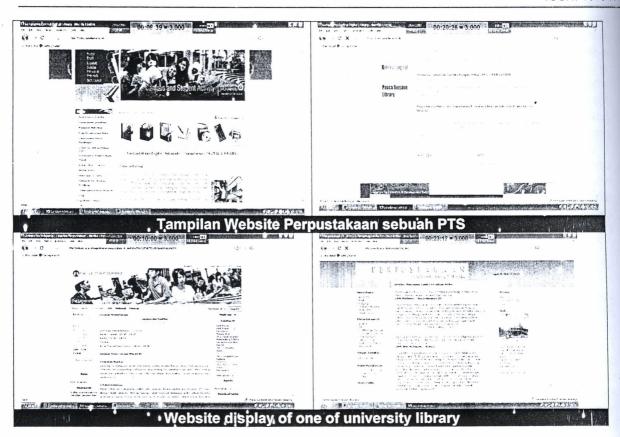
Before the question items are used, hence rehabilitee test should be conducted first. The aim is to make sure that the extracted data are effective to measure what will be measured. Cronbach's alpha measurement which is used to measure reliability from a group of indicators from two or more variables. The values are estimated around 0 and 1 whereas a high alpha value indicates a high reliability among those indicators. The researchers are generally receive alpha cronbach if it is greater than one or equals to 0.60. Reliability test is conducted by comparing the Cronbach's alpha value with the entire coefficient rehabilitee value. This equalization states that if apparently the coefficient value of each item is less than Cronbach's alpha value, thus that item is stated to be reliable, and it happens in the opposite way as well.

Independent-Samples T-test is a test by using distribution towards signification of certain average difference from two sample groups which are not related. The needed data is ratio data or interval. Independent-Sample T-test is used to compare the difference between two means (average) from two independent samples with the assumption saying that the data is normal distribution. This test is used to examine the effects of one independent variable towards the dependent variable. One Way ANOVA is a test in order to know the actual average difference between variant from three sample groups or more which is caused by one of the existing factor.

4. RESULT AND DISCUSSION

Development of Library Service Feature with Multimedia Basis

According to Indonesia National Education Department (2006), library facilities are the furniture and equipment which are required to be available inside the library. Furniture is the things that are needed in the library in order to enhance the function of library while equipment is the aid tools or implements which are used to enhance the activities in the library optimally. From a range of opinions, it can be concluded that the definition of facilities is the media or aid tools which are used to enhance and encourage the activities in library. While web facilities are media which enhance the internet service activities thus it can run optimally. There is a web facility in library also which is also available in Gunadarma University and Indonesia University, such as shown below



Measurement of Library Service Quality with Internet Basis

a. Reliability and Validity of WebQual Instruments

Analysis is conducted by looking at the amount/value of Cronbach's Alpha and Cronbach Alpha is item deleted. The result of the reliability examination denotes that negative value is found if it is in Cronbach Alpha If Item Deleted. Thus, that variable is not reliable. Cronbach's Alpha is a general measurement which is used to measure the

rehabilitee from a group of indicators from two or more variables. The value is estimated around zero and one whereas a high Alpha value indicaes a high reliability among those indicators.

Before taking 130 samples of respondent, the writer takes 30 respondents to answer 14 closed questions with availability of three possible answers in each of those questions. He result of reliability research and a complete validity can be seen in the table shown below

Table 2. Result of Reliability and Validity

No	Variabel dan total Alpha	Buti r	Alpha if delete d	• Loadin g factor	KM	Barlet t X	Test Sign	Keterangan
	Usability	1	,888,	,780				
4	,	2	,887	,794				Sernua butir
1.		3	,878	,829	7.10	00010	200	valid dan
	,896	4	,850	,913	,746	90.840	,000	reliabel
		5	,859	,885				
	Information Quality	1	,845	,843				
		2	,828	,872				Semua butir
2.		3	,887	,658	,792	75.505	,000	valid dan
	,874	4	,830	,863				reliabel
		5	,837	,850				
	Service	1	,750	,752				Camura builtin
_	Interaction	2	,658	,862	004	05.704	000	Semua butir
3.		3	,634	,840	,684	35.724	,000	valid dan
	,779	4	,789	,646				reliable

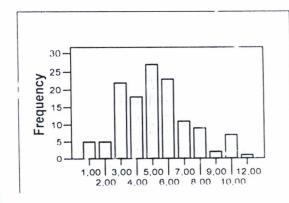
The result of the construct validity test denotes that all of the variables have quite high construct validities, which are indicated by 1. A convergent factor loading into a particular component, 2. Value of KMO is greater than 0.5 and 3. The result of significant Barlett test. The lowest KMO value is 0.684 for information service variable up to the highest for quality information variable. All of the ideas for each and every variable are grouped to a particular factor or convergent with the factor loading value which is around 0.646 up to 0.913.

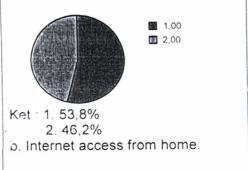
According to the result of research introduction hence from three variables are

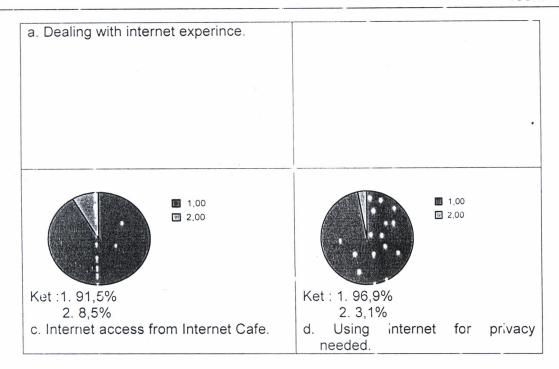
stated valid and are unchanged. Even though for third point (3) on Quality Information variable and fourth point on Interaction service variable which have a greater Alpha value in comparison with the valid alpha value.

b. Profile of Library Service Usage on Internet Basis

The pattern profile of internet usage and usage frequency of library web consist of the experience of using internet, accessing internet from house, accessing internet from internet café, using internet for personal business, web library frequency







According to the above diagrams, it is known that the respondents' experiences using internet is five years as the longest period. And for those who access the internet in their home are 70 people or 53.8% while 60 people or 46.2% do not access the internet in their home. Most of the respondents access the internet from internet café as 119 people or 91.5% and those who do not access the internet from internet café are 11 people or 8.5%. While the respondents who use the internet for their personal business are 126 people or 96.9% and respondent who do not use the internet for their personal business are 4 people or 3.1%.

Respondent's visit intensity that use web library is once a month as the longest period, while the least that use the web library is nearly all day in a month.

By looking the question below, it is known that more than 56 people or 43.1% respondent sent email, 52 people or 40.0% read email, 67 people or 51.5% visit the colleges' or universities' sites, 62 people or 47.7% do chatting, 51 people or 39.2% search for the information using web library, 50 people or 38.5% download, 65 people or 50.0% upload, 75 people or 57.7% search for catalogs from web library, 65 people or 50.0% search for writings' titles, and 71 people or 54.6% search for scientific journals.

Vo.	Butir Pernyataan ,	1,11	2 '';	113	.4	5
1.	Sending email	-	6,2%	43,1%	36,9%	13,8%
2.	Reading email	0,8%	5,4%	40,0%	40,0%	13,8%
3.	Browsing universities site	2,3%	19,2%	51,5%	24,6%	2,3%
4.	Chatting (example yahoo messenger, MIRC, ICQ)	2,3%	4,6%	29,2%	47,7%	16,2%
5.	Find information by Web Library	-	5,4%	20,0%	39,2%	35,4%
6.	Download a file from internet	-	5,4%	30,0%	38,5%	26,2%
7.	Upload file by internet	2,3%	11,5%	50,0%	29,2%	6,9%
8.	Find book catalog by web library	0,8%	10,8%	57,7%	24,6%	6,2%
9.	Find reseach report by web library	2,3%	10,0%	50,0%	32,3%	5,4%
10.	Find journal by web library	3,8%	6,2%	54,6%	29,2%	6,2%

Here is the result of categorizing the respondents' answers towards the encouraging factors of using the internet. By classifying into four kind of factors, such as a Entertainment factor; b. Source of Information; c. Speed and Up-date; and d. Relevant and Tasks.

The hypothesis in this research is service quality variable (WebQual dimension) at the same moment affect the intensity of users' visit of web library significantly Government Universities (University of Indonesia). In order to examine whether the first hypothesis is accepted or rejected, F test is used. From the result of the test, the result is collected as Sig F 0.000 < a = 0.05, which means the three variables which are researched(Usability-X1, Information Quality-X2, and Service Interaction-X3) are altogether affect the intensity of users of web library visit on Government University (University of Indonesia). With hypothesis, it is stated that it is accepted and the fact is proved, in the other words hypothesis (H1) is approved and hypothesis (Ho) is rejected.

5. CONCLUSION

The difference of web library which is researched from respondent profile with WebQual three dimensions is Usability, Information Quality, Service Interaction, such as gender, faculty, and the level of collegians. And the result is known that from those three respondent profiles, the lowest main difference is on the faculty respondent profile and collegians level and is more dominant on gender respondent profile because the result from the difference of calculation on gender is very far from the other two profiles mentioned above.

The difference of web library which is researched with WebQual dimension is Usability, Service Interaction has many differences because the significant value (2-tailed) is less than 0.05 except on Information Quality which has no difference because the significant value (2-tailed) is greater than 0.05 by using Uji-t Dua Sample Independent. Majority of universities is private universities.

The effect of three variables (3 Dimensions WebQual) towards the users' visit intensity

to Web Library in universities (private and public) is very small or not enough and for the users' visit intensity on Web Library in the two universities should be increased. Visit intensity is affected by three dimensions WebQual in private universities as 21.6% while public universities as 29.7%, thus the public universities is affected more. Probably, the collegians and students feel more convenient and save in doing public/government transaction in universities as well as knowing the web library. While in private universities, the collegians and students do not really know about the web library.

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