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Graduate School of Information Management

Master

Factors Influencing User Satisfaction of Document Management System in Hai Duong Industry and Trade Department

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Factors Influencing User Satisfaction of Document Management System in Hai Duong Industry and Trade Department

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ABSTRACT

In recent years, there are more and more agencies and enterprises applying computer software into document management. By applying eDocman software into document management, Hai Duong Department of Industry and Trade has contributed to significantly reduce time and costs and increase the quality of working management as well as the ability to share information.

Based on implementation of software in the reality, this study aims to provide the factors affecting the satisfaction of users in the application of this software in Hai Duong Department of Industry and Trade. Research model I applied for this thesis based on the Is Success Model (Delone & Mclean, 1992) with quantitative research methods. The questionnaire will be sent to staff in the Department, data collected will be analyzed by SPSS software. Therefore we will find that how factors influence to satisfaction of users for this software.

Keywords: eDocman, electronic document management, user satisfaction, quality, system quality, information quality, IS Success Model.

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Ha Vu Viet

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Table of Contents

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

IT	Information Technology
IS	Information System
IQ	Information Quality
SQ	System Quality
US	User Satisfaction

Chapter 1 Introduction

1.1 Research background

Information technology (IT) is a collection of scientific technological methods, and technical tools to produce, transmit, collect, process, store and exchange digital information (Information Technology Law No. 67/2006/QH11 on 29/06/2006). In recent years, the explosion of information technology has brought the enormous benefits to the development of society. The application of information technology is used in many fields with many different purposes. It can be said of information technology has created enormous changes in stage management. Previously, the exchange of information in state agencies took place in three ways: direct, phone, paper documents. Direct communication or via phone has quick information transmission speed but accuracy is not high, amount of information is limited and can not store

Exchange of information by paper document solves above limitations but it has not been the optimal form yet. The cost to transmit information is very high including the cost of printing materials, postage and telephone. Storage cost is also expensive. Finding stored documents takes many time and effort. On the other hand with this form, staffs are not capable of working remotely. Staffs who go on a

mission are difficult to deal with jobs at their agency and update newly issued documents.

Since software related to management and administration functions have been launched and put into application, all the limitations of these above three forms of information exchange have been overcome. The management of electronic document has brought benefits such as searching and exchanging quickly information, ensuring the legality, integrity and accessibility of materials, minimize the financial risk by improving access to information, save resources by using electronic operation storage etc…

Assessing the importance of information technology, Prime Minister issued Decision No. 43/2008/QD-TTG on March 24, 2008 approving the application of information technology in the operation of state agencies. Since then, overcome many difficulties, the application of information technology in state management has obtained encouraging results. According to the summary report No 35 issued the Ministry of Communications and Information dated August 27, 2009 on the application of information technology in state agencies, many ministerial agencies and ministry-equal agencies; provinces and cities under the Central have been equipped with softwares related to document management and operation.

For ministry-equal agencies (to directly under units) the rate accounted 90%, for provinces and cities under the Central (to departments, branches, districts) the rate accounted 39%. Softwares are widely used as: general sofwares: input/output document management; eMolisa, e-Office, eDocman, M-files. However, usage levels are not the same and the degree of user's satisfaction for each software is different caused by many factors. This study refers to the degree of satisfaction when using software eDocman in document management in Hai Duong Industry and Trade Department

1.2 Research motivation

Hai Duong Industry and Trade Department was established by Decision No. 36/2008/QD-UBND dated 20/06/2008 of the People's Committee of Hai Duong province on the basis of consolidating Department of Industry and Department of Trade and Tourism. The Department advises and assists the provincial People's Committees in performing the function of state management of industry, small industry and commerce, including all sectors: mechanics, metallurgy, electricity, new energy, renewable energy, chemicals, industrial explosive materials, industry of mine exploitation and mineral processing, consumer industry, food industry, other processing industry, goods circulation in the area, export, import, market

management, trade promotion, electronic commerce, trade service, economic integration, international trade, management industrial branches and industrial locations in the province .

Implementing the Decision No 43/2008 of Prime Minister, together with other units of the province, Hai Duong Industry and Trade Department has used the eDocman software in management and operation to enhance ability to process information quickly, accurately, fully and better service to the organization. The use of software eDocman in Hai Duong Industry and Trade Department has been two years but until now it only has some single reports on the use of this software and also not has a formal study about the degree of user's satisfaction with this software.

Satisfaction level of users is a basis for evaluating advantages of feature and reasonableness of the software. This is also a basis for improving the software for more complete and consistent with the characteristics of the Department. Therefore, research on satisfaction when use the software of staffs in Hai Duong Industry and Trade Department is important and necessary.

1.3 Research purpose

The research aimed to:

- Consider the influence of factors such as information quality, and system

quality to the satisfaction of users.

- Determine factor causing most influence to the satisfaction of users.

- Identify objective opinions of the user about the effects of eDocman in Hai Duong Industry and Trade Department

- Predict the factors affecting the satisfaction of users in the future.

This research should focus to answer some questions as following:

- What do factors affect to the satisfaction of eDocman users at present and future?

- Are users satisfied with the elements given or not?

- Do satisfaction of user eDocman extent?

1.4 Research Procedure

- Presenting problems of information technology and the need of application at the Hai Duong Industry and Trade Department.

- Presenting Theory basis of the factors affecting user's satisfaction eDocman.

- Providing research model and hypotheses.

- Designing table of questions based on theory and opinions from teacher.

- Collecting the answers and analyzing data by SPSS software.

- Providing results and discussion.

Chapter 2 Literature Review

2.1 Electronic document management and eDocman software

2.1.1. Electronic document management

Until now, document still is a means to exchange information in the administrative activities. It is said that the document is the most basic concept in the field of writing. Along with the development of information technology, the document is also changed to another format, such as electronic text. Electronic document is considered as the type of documents read and processed by computers and related equipment. Basic characteristics of electronic document are in the way information stored. Storage must be implemented by the information carriers such as hard drives, floppy disks, USB. Thus, electronic document management is "the application of technonogy to save paper, speed up communication, and Increase the productivity of business processes" (Sprague, 1995)

2.1.2. eDocman Software

Currently, the application of computer software into document management has gradually become an essential need for the development of an agency, enterprise or organization. Hai Duong Industry and Trade Department is one of the pioneer in this movement with the application eDocman software on electronic document

management.

eDocman software is a document management and workflow management system built according to advanced technologies with high security, multi-use objects and easily development in many different organizational models. The system allows management, storage, searching the entire document of the organization in an only database. The distribution and exchange of documents within the agency is also tracked and stored in the database and collected into the working record.

Applications built on eDocman include: the operational management and administrative management, information materials storage, operational records management, customer records management, ISO, scientific research management, electronic newspaper design process management and many other applications as required etc…

Furthermore, based on eDocman technology, agencies and enterprises can develop many different applications such as Business Process Management, Web Content Management, Portal, Enterprise Integrated Applications, etc…

Function of the product:

> Workflow management

> Database and document management

> Records search

> Report export

> Application Integration

Uni-office joining

> User administration

> Job record management

> Stored Records Management

> Data safety and system security

> Openness

> Compatibility

Highlight features of the product

+ Providing self-define ability of processes to deal with documents, documents related to the job record to suit the organization;

+ Easy to change structure of documents. The product has ability to change documents to suit the need of user.

+ Integration with a variety of peripheral devices such as scanners, fax machines etc…

+ The product is built on Web-based: with a computer connected to the internet

you absolutely can log into the program and control all activities within your agency;

+ Openness – The product has the ability to integrate with the portal of an organization and other software systems such as eBanking, ERP, CRM.

2.2 User Satisfaction

Satisfaction is defined as "a summary evaluation of an interactive system captured in term of how easy a user thinks a system is to use" (McNamara and Kirakowski, 2008, p.11), this definition shows that easy use is a factor playing an important role in the satisfaction of users.

On aspects of information technology, user's satisfaction may be defined as the extend to which users believe the information system available to them meet their information requirements (Ives et al., 1983).

Thus it can be seen, the user's satisfaction is what users really want when they use a product or service. The smaller the gap between desire and experience in using the service of users is, the higher the level of satisfaction of users to their organization.

2.3 Views on quality

Quality is a criterion that organizations, enterprises always focus on, and that is the criterion of user the service or product used to evaluate operations of an

agency or business. Until now there are many views on quality. Crosby (1979) thinked that quality is the satisfaction of the needs, Juran (1989) considered quality as "fitness for use". Reeves and Bednar (1994) thinked that quality including 4 factors: Excellence, value, conformity to requirement and meeting customer expectation.

The above concepts show that the response of the user's request is a quality measure of a product or service.

For example: when comparing the two computers with the same configuration, and the same price, the computer with better durability will be evaluated as better quality. Here, the durability has met the expectations of users and it is also the measure of product quality.

2.4 System quality

System quality is understood as the quality of information processing system (N. Goria et al., 2010).

Based on opinion of B. Ives (1983), factors as a measure for this field include system availability, reliability, responsiveness and system flexibility. Eldon (1997) showed the measures of system quality was composed of response time, convenience of access, used language’s characters, realization of user requirements,

correction of errors, data and model security, system and procedure documentation, system flexibility, and system integrity. According to DeLone & McLean (2003), system quality was composed of adaptability, perceived usefulness, reliability, response time, and perceived ease-of-use

Within the scope of this study, I think software, hardware, equipment and network are key factors affecting the quality of the system, factors such as the "ease of use", "data and model security " will affect software quality, "Perception of user requests, " "revision error" affects Hardware & Equipment, "response time" affects Network.

2.4.1. Software

The development of software technology goes hand in hand with the growth of the organization, which means the software quality directly impacts the effectiveness of the organization. IEEE (1991). Defined software quality as the degree to which a system, component, or process meets specified requirements, and the degree to which a system, component, or process meets customer or user need or expectations.

There are many studies on the factors affecting software quality, including research that ISO / IEC 9126-1. (2001) standard mentioned. According to this

standard, these factors ensuring software quality include six major standards: functionality, reliability, usability, efficiency, maintainability, portability.

Considering on study aspects that the research mentioning, the major factors to be considered as affecting the satisfaction of users are security, ease of use.

Information system security is a major concern for the software industry (Halkidis et al., 2006) and now it has become a hot issue, especially for an agency performing state management on two major fields of industry and trade such as Hai Duong Industry and Trade Department. According to function and task, the Department also manages a lot of information relating to enterprises in the area

To ensure the legal rights of these enterprises, information is only provided for those who have authority. The change of information content is only conducted by those who have authority, and all sources of exposure to such information, mainly through the computer system must be tightly controlled. That is also a big challenge security functios of eDocman.

At present, the document management software are also built to serve for many purposes in the work of the user, but if a software with many functions that complicated interface will cause difficulty for users, so ease of use factor is also a noteworthy factor.

2.4.2. Hardware and Equipment

Electronic document management is a set of technologies to radically change the working methods of state agencies. This system works throughout the agency, so it requires an appropriate information technological infrastructure, computers must be compatible with systems. At the same time, computer systems and equipments must constantly be maintained, discovered the failure to timely replacement. In addition, all officials working with document must be equipped with personal computers.

2.4.3. Networking system

As technology has continued its explosive growth, the Internet has become and will continue to be a large part of our lives (Chien Chou and Hsinyi Peng, 2010). Demands for Internet use as well as its application are increasing in all areas. eDocman application is one of the applications built on Web-based. Function of document circulation between offices of the Department with the Division of Industry and Trade in districts will not be effective if the computer system does not connected to the Internet. Therefore, ensuring of Internet connection is required in the eDocman application

Another connection standard used to connect between the internal divisions

of the Department together is the local area network (LAN), the flow of documents within the Department mainly through this way, thus ensuring speed to shorten the time to access and retrieve information in LAN is also very important factor.

2.5 Information quality

Information quality has become a critical concern of organizations and an active area of Management Information System research (Y.W. Lee et al.,2002). Information quality is defined as the quality of the system outputs of the product (DeLone & McLean, 1992).

Huh et al. (1990) has defined four ranges of information quality including: accuracy, completeness, Consistency, currency. Nelson et al. (2005) after the study gave a different outlook on information quality including accuracy, completeness, currency and format. Doll et al. (1994) points out the quality of information including: content, accuracy, format, ease of use and timeliness

Within the scope of this study, the accuracy factor is affected by IT staff, and ease of use is within the software. I think the factors strongly impacting on the qualitative aspects of information affect to the satisfaction of users. These factors include: format, timeliness, completeness.

2.5.1. Format

Information format measures the style of presentation of information and whether information is provided in an easy-to-understand format (N. Gorla et al.,2010).

Presentation of information refers the way of margins, presenting fonts and numbers. The purpose of this work is to make a beautiful layout and easy to read document that help the reader may memorize information more easily. For document management software, solving this problem is the first step holding hearts of users

2.5.2. Timeliness

The Department assume the role of state management on industry and trade, two areas play a very important role in the economy so most of documents of the Department suffer pressure of time. Therefore, information founded promptly and in time be regarded as one of leading priorities during the operation, handling work. To meet the legitimate needs of staffs in the Department, the system is always in a state of ready for operation, ensuring that users can look up information whenever they need.

2.5.3. Accuracy

Accuracy is a guarantee of the authenticity of the information. Hai Duong

Industry and Trade Department is the agency to advise and assist the provincial People's Committees in performing the function of state management, so all information posted to the system need to ensure absolute accuracy. Accurate information helps leaders understanding accurately the issues of their organization from which provide a specific operation plan for managing and handling work.

2.6 IS Success Model

Since first presented in 1992 by Delone and Mclean, IS Success Model is always a pattern in studying of measuring the success of an information system. Based on research processing, Delone & McLean (1992) provided the link between the six factors leading to success including: System quality, information quality, use, user Satisfaction, individual impact, organizational impact. The relationship between these factors is shown in the below figure:

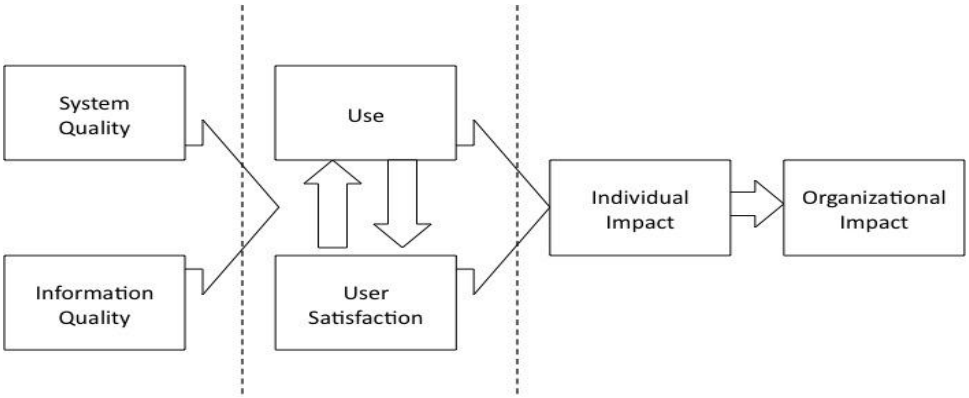

Figure 1. IS Success Model (Delone & Mclean, 1992)

Since then, a lot of studies have recognized, applied and developed of IS Success Model of Delone & McLean. Goodhue and Thompson (1995) have studied and suggested a significant relationship between "System Use" and "Invidual Impact." Wixom and Watson (2001) tested the interaction between two factors "Information Quality" and "Individual impacts", the results showed that this relationship was significant.

By time, the impact of information systems to life is more important. The development of management support systems along with the explosion of E-commerce has fostered Delone and McLean developing and updating IS Success Model to suit the advancement of science and technology. However, their original model is still the basis for measuring the success of information systems. Compared with the original model, the IS Success Model (Delon & McLean, 2003) was added to the "Service Quality". "Individual Impact" and "Organizational Impact" were replaced by the "Net Benefit". The relationships were expressed as follows:

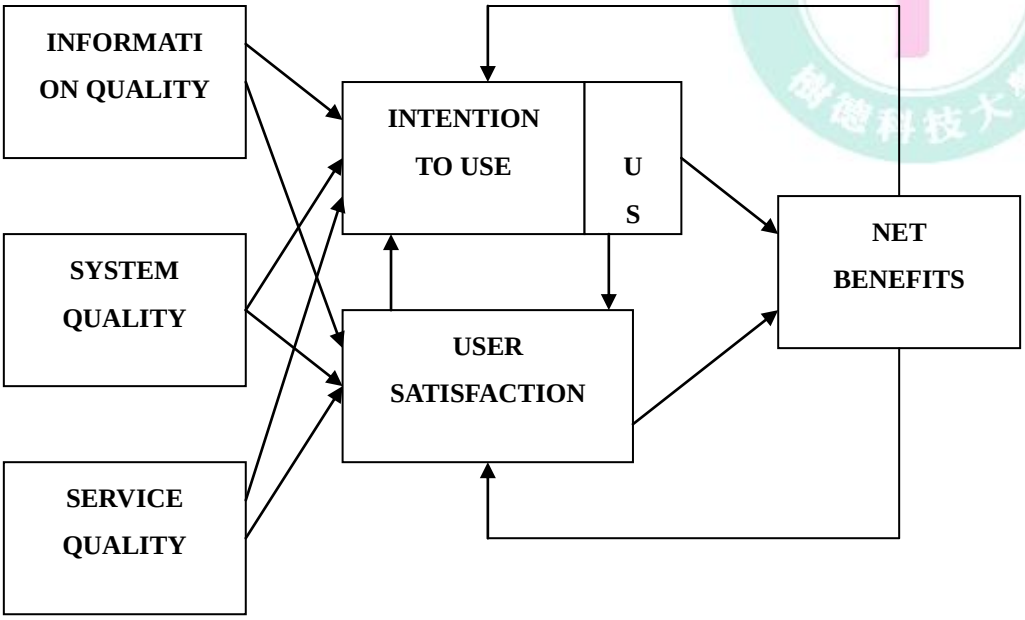

Figure 2. IS Success Model (Delone & Mclean, 2003)

Chapter 3 Research Methodology

3.1 Research Framework

The purpose of this study is to study the factors affecting the satisfaction of eDocman users, find a link between information quality (format, timeliness, completeness) and system quality (network & equipment, hardware, software) to the satisfaction of users of this software. Based on the above theory, the research model is built as follows:

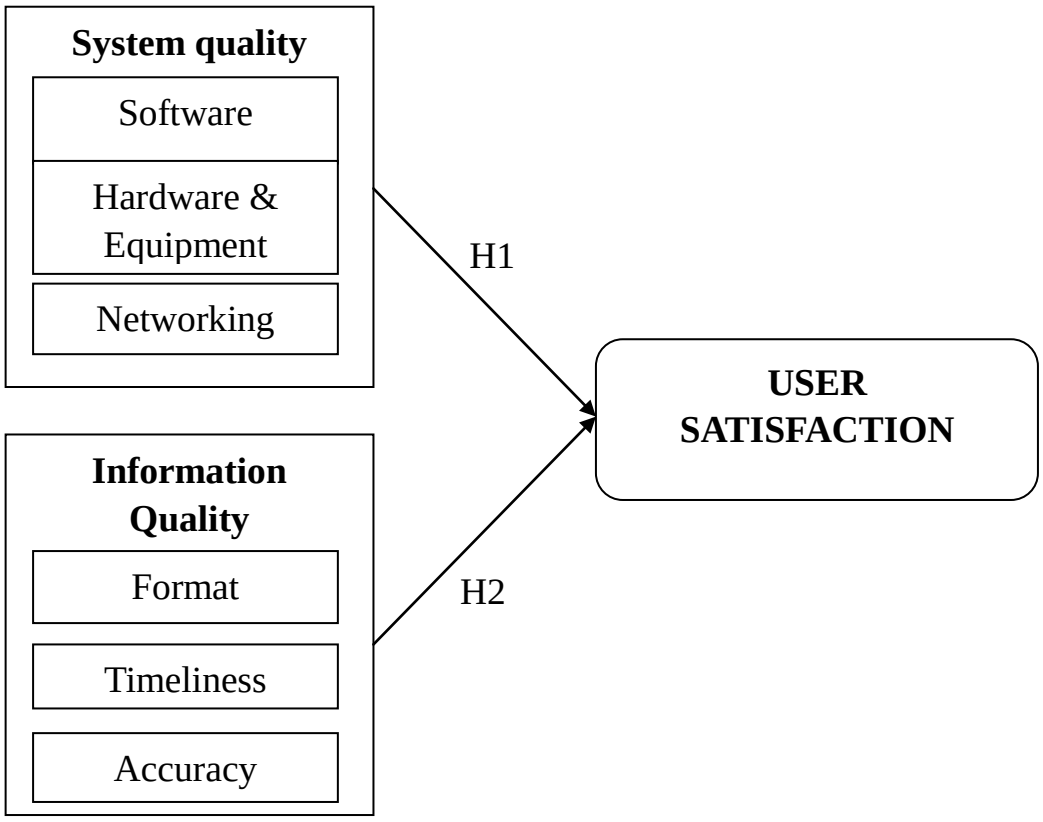

Figure 3. Research Framework based on IS Success Model (Delone & Mclean, 1992.)

3.2 Research Hypotheses

Based research model, the theoretical basis as well as the purpose of the study, hypothesises have been introduced for consideration.

Firstly, the quality of the system can directly impact the satisfaction of users. Thus, this study directs to the following hypotheses:

H1: System quality factors affects positively to the satisfaction of users.

After the system quality, information quality is also a factor that may affect positively to the satisfaction, the hypothesis is suggested as:

H2: Information quality factor affects positively to the satisfaction of users.

3.3 Measurement of variables.

In this study, three variables mentioned are: System Quality, Information Quality and Service Quality. This section offers approaches, measurement of these variables

3.3.1. System Quality

Software, Hardware & Equipment, Networking are factors used to measure the impact of the Quality System to User Satisfaction. Measurement of these variables based on previously relevant research, and had some editing to suit the content of the study. All factors are considered and measured by using the following

5-point scale: Strongly disagree, disagree, neutral, agree and strongly agree. The measured factors are presented in table 1, and these factors are indicators measuring the impact of System Quality to the User Satisfaction.

Table 1. Items of System Quality influencing User Satisfaction

Variables	Questionnaire	Reference
Software	Information of eDocman is protected against unauthorized access	Y.W.Lee et al. (2002)
	Information of eDocman can only be accessed by people who should see it	
	I rarely make mistakes when using eDocman	McNamara and Kirakowski (2011)
Hardware & Equipment	Hardware & Equipment are well integrated	Bailey and Pearson (1983)
	eDocman has short time lag between data input and output for batch processing	
	The PC System should re-upgrade after 3 years.	
Networking	The high speed of broadband is the factor for increasing user satisfaction.	
	My computer can access Internet at anytime	
	My computer can share files with other computers at anytime	

3.3.2 Information Quality

To measure influence of Information Quality to User Satisfaction, Format, Timeliness, Accuracy factors are provided. All factors are considered and measured by using the following 5-point scale: Strongly disagree, disagree, neutral, agree and strongly agree. The measured factors are presented in table 2, and these factors are indicators measuring the impact of Information Quality to the User Satisfaction.

Table 2. Items of Information Quality influencing User Satisfaction

Variables	Questionnaire	Reference
Format	Information format of eDocman is easily to understand	Wang and Strong (1996)
	Information format of eDocman help users to easily memorize information	
	Information format of eDocman has a pretty lay-out	
Timeliness	Information of eDocman is sufficiently current for our work.	Y.W.Lee et al. (2002)
	Information of eDocman is sufficiently timely.	
	Information of eDocman is sufficiently up-to-date for our work	
Accuracy	Information output (including on-screen and printed output) of eDocman are accurate.	Doll et al. (1994)
	Information output (including on-screen and printed output) of eDocman are relevant for decision making	
	The presentation of information is clear.	Adam Finn (2011)

3.3.3. User Satisfaction

To measure user satisfaction, all factors are provided, all factors are considered and measured by using the following 5-point scale: Strongly disagree, disagree, neutral, agree and strongly agree. The measured factors are presented in table 3.

Table 3. Items of User satisfaction

Variable	Questionnaire	Reference
User	eDocman was satisfying to me	Adam Finn (2011)
	I am very contented with using	T.J. Larsen et

Satisfaction	eDocman.	al. (2009)
	Most of my expectations from using eDocman were confirmed.	
	I think eDocman is useful	

3.4 Sampling plan.

To serve the purpose of research, questionnaires were sent to all those directly used applications of eDocman in Hai Duong Industry and Trade Department including managers and other officials who are working in related areas to document management.

In the Part 1 of the questionnaire, participations will be asked to complete the necessary information such as gender, age, location work, seniority and experience working with eDocman.

In the part 2, participations will in turn answer the questions given in the questionnaire on 5- point scale were: Strongly disagree, disagree, Neutral, agree and strongly agree. There are 9 questions to measure effects of the Quality System factor (Software, Hardware & Equipment, Networking) on User Satisfaction, 9 questions to measure the effects of Information Quality factor (Format, Timeliness, Accuracy) on User Satisfaction, 6 questions to measure the effect of Service Quality Factor (IT Staff, Management) on User Satisfaction, 4 final questions to measure satisfaction

levels of users for eDocman.

Questionnaires were sent to officials and employees in the department by e-mail. 123 samples have been sent. After two weeks, 115 staffs had feedbacked, but only 112 samples answered fully and can be analyzed to research.

3.5 Research Methodology

This study used quantitative methods. To serve for the analysis to test hypothesis, this study used the SPSS 15.0 software. The analysis is expressed as follows:

3.5.1. Descriptive Statistics

This section describes the personal information of participations including gender, age, work location, seniority as well as experience working with eDocman.

3.5.2. Factor Analysis

According to DeCoster (1998), “Factor analysis is a collection of methods used to examine how underlying constructs influence the responses on a number of measured variables”. Factor loading indicate the correlation between principle components (factor) and original variables (Chen & Hsiao, 2010). A loading higher than 0.5 generally suggests that the original variable be better referred to that factor

(Chen & Hsiao, 2010).

3.5.3. Reliability Analysis

The study results when completed will have no scientific value if not determine reliability. According to Field (2005), Reliability is "the fact that a scale should consistently reflect the construct it is measuring." So, reliability is consistency in participation's answers in many different times. A study is considered as reliable when the coefficient is large. Cronbach (1951) suggested a method for measuring reliability, which is measured by variables of Cronbach 'Alpha. If Cronbach 'Alpha values is greater than 0.7 it means that this criterion is reliable, and if Cronbach' Alpha is less than 0.7, it means that the reliability of this criterion is not guaranteed and must be removed.

3.5.4. Regression Analyses

J. Han et al (2001, 2006) suggested that regression is a statistical technique for predicting the constant value. This method tests the hypothesis of the study, thus allowing analysis of the association between independent variables and dependent variables.

Chapter 4 Data Analysis and Result

4.1 Descriptive Statistics of Sample Demographics

According to Table 4, in the total 112 samples collected there are 53 men and 59 women accounting for 47.3% and 52.7%, respectively. The number of people aged 20 to 30 years are 19 (accounting for 17.0%), 30 to 50 years are 54 (accounting for 48.2%) and over 50 are 39 (accounting for 34.8%). Thus, the majority of respondents are between the ages of 30 and 50 (48.2%).

Table 4. Characteristics of sample demographic

		Frequency	Percentage
GENDER	Male	53	47.3%
	Female	59	52.7%
AGE	20 -30 age	19	17.0%
	30 - 50 age	54	48.2%
	Over 50 age	39	34.8%
Position	Manager	27	24.1%
	Staff	85	75.9%
Experience	Under 1 year	52	46.4%
	1 - 2 year	60	53.6%

On the current working position, 27 of respondents are working at management positions (accounting for 24.1%), the remaining 85 persons are employees (accounting for 75.9%).

Because eDocman is newly applied in Hai Duong Industry and Trade

Department in recent two years, so all of the respondents have only exposed to this application in less than two years, in which 52 respondents (accounting for 46.4%) have accepted to eDocmen in less than 1 year; the remaining 60 persons, accounting for 53.6% have used eDocman in the time from 1 to 2 years.

4.2 Reliability Analysis

To check the reliability of measurement criteria, Cronbach's Alpha was used. Table 5 showed that the analyzed criteria have high reliability, specifically, nine measurement criteria of the Quality System factor have Cronbach 'Alpha coefficient of 0.883, nine measurement criteria of the Information Quality factor have Cronbach 'Alpha coefficient of 0.935, and four measurement criteria of User Satisfaction factor have Cronbach's alpha coefficient of 0.776.

Table 5. Factors Reliability

Factors	Cronbach's Alpha	No of Items
System quality	0,883	9
Information quality	0.935	9
US	0.776	4

4.3 Factor Analyses

Factor analysis is actually an interdependence technique whose primary purpose is to define the underlying structure among the variables in the analysis (Chen & Hsiao, 2010). Stages for doing factor analysis include: determining

objectives of Factor Analysis, designing a Factor Analysis, examining the assumption in Factor Analysis, deriving Factors, Interpreting the Factors, Validating the Factors Analysis and Extending additional users of the result (Chen & Hsiao, 2010).

In oreder to assess construct validity, Varimax rotation was employed. Table 6 show the result of the Varimax rotation on the 22 items of 3 factors, It suggests that Varimax rotation showed the relatively high correlation between criteria of the same factors.

4.4 Regression Analysis

To test the hypothesis of the study, linear regression was used for the purpose of testing the relationship between independent variables and dependent variables. We also check whether a higher level of System quality, Information quality may increase levels of user satisfaction or not (H1, H2)

Hypothesis H1 Testing: System quality factor affects positively to the satisfaction of users.

Hypothesis H2 Testing: Information Quality factor affects positively to the satisfaction of users (see table 7).

Table 6. Varimax Rotated Component Analysis (Factor-Loading Matrix)

Items	System quality	Information Quality	US
SQ1	.829		
SQ2	.906		
SQ3	.866		
SQ4	.659		
SQ5	.890		
SQ6	.762		
SQ7	.894		
SQ8	.873		
SQ9	.903		
IQ1		.786	
IQ2		.916	
IQ3		.867	
IQ4		.738	
IQ5		.888	
IQ6		.815	
IQ7		.856	
IQ8		.884	
IQ9		.898	
US1			.886
US2			.809
US3			.884
US4			.860

Extraction Method: Principal Component Analysis.

a 3 components extracted

Table 7. Linear Regression Analysis for Testing H1, H2

Construct	Unstandardized coefficients β	t value	R2	Adjust R2	F value
(Constant)	1.967***	3.515	0.922	0.850	308.957***
System Quality	0.230***	6.037			
Information Quality	0.146***	4.824			

Dependent variable: Satisfaction of users

*** P <0,001, ** p <0,01, * p <0.05, + p <0,1

Table 7 shows a good fit (F = 308.957, p = 0.000). And at the significant level of 0.05, hypothesises H1, H2 are demonstrated being correct, specially:

H1: System quality factor affects positively to the satisfaction of users.

H2: Information Quality factor affects positively to the satisfaction of users.

We can see in the table adjust R2 value is 0.922, meaning that the explanation ability is good for our dependent variable, User's satisfaction. In detail: 92,2% effect to user's satisfaction is because of 2 factors in model: system quality, and information quality, the rest 7.8% is from external factors.

Look at table 7, we see t value = 6.037, Sig. = 0.000 so coefficient 0.230 of system quality have meaningful statistics at 0.001. Means: If the system quality (independent variable) were evaluated on an increase of 1 score, User's satisfaction (dependent variable) would also increased by 0.230 points.

Coefficient 0.146 of information quality has meaning statistics at 0.001. Means: If the information quality (independent variable) were evaluated on an increase of 1 score, User's satisfaction (dependent variable) would also increased by

0.146 points.

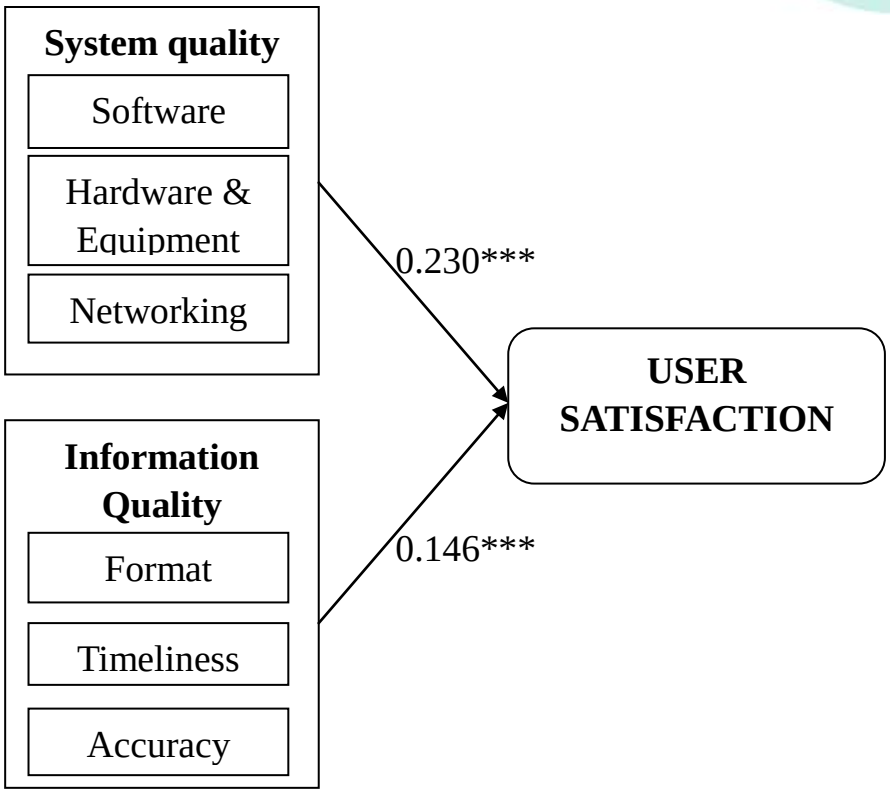

Figure 4. The Coefficient of research model

We can see the coefficient of research model in figure 8.

Model written as follows:

US = 0.230 * SQ + 0.146 * IQ

Chapter 5 Conclusion and Suggestion

5.1 Research Conclusion

The purpose of this study is to investigate the influence of these factors to the satisfaction of users. Results of the research hypotheses are given in table 8

Table 8. Research hypotheses and Result

Research Hypotheses	Results
H1: System quality factors affects positively to the satisfaction of users.	Supported
H2: Information quality factor affects positively to the satisfaction of users	Supported

This study confirmed that the satisfaction of the users have an important role and is the basis to assess the preeminence of features and the reasonableness of the software, which can help to build and complete software to suit the characteristics of Hai Duong Industry and Trade Department.

The research was scientifically conducted by methods of sample selection and quantitative research. After data processing, the results collected are very satisfactory; the Cronbach Alpha coefficients measuring reliability of factors are relatively high. First, the study demonstrated that the system quality factor including hardware, software and network impacts positively to the satisfaction of users.

Next, the study also demonstrated the information quality factor including:

format, timeliness and accuracy impacts positively to the satisfaction of users.

5.2 Contributions and implication

Results of the study provide some practical value for Hai Duong Industry and Trade Department. From there, we can have an overview on the status of eDocman software application in managing documents at the Department. We also can see what factors affect satisfaction of eDocman software users to give out solutions to improve the efficiency of using this software. This research model can also be a good reference for other studies in the field of information systems application in general and document management in particular.

Based on the results of this study, we suggest that the management units Hai Duong Industry and Trade Department have more attention in improving the system quality factor, for example, frequent upgrading and maintaining information technological infrastructure, enhancing information security by controlling the logging rights and the using right, as well as ensuring network connectivity at high speed for computer system at the Department.

Similarly, the information quality requires the Department to do good checking information, ensuring the accuracy of the information, allowing information to users in a timely, contributing handling work quickly and efficiently.

From the above results, we hope the leaders of the Department will make adjustments to improve relations as well as working conditions that contributing to improve efficiency in the application of eDocman software in document management in Hai Duong Industry and Trade Department.

5.3 Research Limitations

Like other studies, this study also exists some limitations as following: While eDocman software is applied and implemented in many corporations, institutions and enterprises from central to local levels, the study could only investigate and gather comments from people who are directly use this software at the Hai Duong Industry and Trade Department. 115 samples were collected of which 112 ones meet requests to analyze. This number is still less than the potential market of the eDocman software, so the results are only partly reflect internal values.

A further limitation of the study was lacking question open in the questionnaire, so the information collected from the respondents are also limited. Finally, this study did not control that the respondents will not read carefully before answer questions, the result is the answer that does not reflect the purpose of the question.

5.4 Future Research

In order to understand more about the factors affecting the satisfaction of users in the future, we can develop the study in the following directions:

Future research will not be encapsulated within the Hai Duong Industry and Trade Department, it can be extended to state administrative agencies in all Hai Duong province, so the samples will be more collected, results obtained will be more accurate and higher value.

Obtained results of this study indicate that the factors of system quality and information quality have positive effects to the satisfaction of users, but with time, the relationship may change, and the task of future research will be reviewing to see if the changes between this relationship or not, and finding new factors affecting satisfaction the user's satisfaction.

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Internet：

1. http://haiduongintrade.vn

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3. Legal documents in Vietnam

4. Information Technology Law No. 67/2006/QH11 on 29/06/2006

5. Decision No. 43/2008/QD-TTG on March 24, 2008 by the Prime Minister approving the application of information technology in the operation of state agencies

6. The report No. 35/BC-BTTTT issued by the Ministry of Communications and Information on August 27, 2009 on the application of information technology in state agencies.

7. Decision No. 36/2008/QD-UBND on 20/06/2008 of the People's Committee of Hai Duong province.

Appendix A

RESEARCH QUESTIONAIRE

Title: “Factors influencing user satisfaction of document management system in Hai Duong industry and trade department.”

PART I: GENERAL INFORMATION

This section covers some of your private information. Please kindly tick the squares corresponding with assumed statements of your private information.

1. Gender □ Male □ Female

2. Age: □ from 20 to 30; □ from 30 to 50; □ over 50

3. Position: □ Manager; □ Staff

4. For how long have you been using the eDocman?

□ Less than 1 year; □ 1 to 2 years

PART II: FINISH YOUR TABLE OF QUESTION

This section includes items concerning factors affect on user satisfaction while using the eDocman. You are required to fill-out below question. Please circle the numbers corresponding with your degree of agreement to each item with the denoted scale: “1”= strongly disagree; “2”= disagree; “3”= Neutral; “4”= agree; “5”

= strongly agree.

Variable	Conten of items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
System quality Factor						
Software	Information of eDocman is protected against unauthorized access	1	2	3	4	5
	Information of eDocman can only be accessed by people who should see it	1	2	3	4	5
	I rarely make mistakes when using eDocman	1	2	3	4	5
Hardware& Equipment	Hardware & Equipment are well intergrated	1	2	3	4	5
	eDocman has short time lag between data input and output for batch processing	1	2	3	4	5
	The PC System should re-upgrade after 3 years.	1	2	3	4	5
	The high speed of broadband is the	1	2	3	4	5

	Factor for increasing user satisfaction.					
Networking	My computer can access Internet at anytime	1	2	3	4	5
	My computer can share files with other computers at anytime	1	2	3	4	5
Information Quality Factor						
Format	Information format of eDocman is easily to understand	1	2	3	4	5
	Information format of eDocman help users to easily memorize information	1	2	3	4	5
	Information format of eDocman has a pretty lay-out	1	2	3	4	5
Timeliness	Information of eDocman is sufficiently current for our work.	1	2	3	4	5
	Information of eDocman is sufficiently timely.	1	2	3	4	5
	Information of eDocman is sufficiently up-to-date for our work	1	2	3	4	5
	Information output (including on-screen and printed output) of	1	2	3	4	5

Accuracy	eDocman are accurate					
	Information output (including on-screen and printed output) of eDocman are relevant for decision making	1	2	3	4	5
	The presentation of information is clear.	1	2	3	4	5
User Satisfaction						
	eDocman was satisfying to me	1	2	3	4	5
	I am very contented with using eDocman	1	2	3	4	5
	Most of my expectations from using eDocman were confirmed.	1	2	3	4	5
	I think eDocman is useful	1	2	3	4	5

Thank you very much!