DETERMINING THE INFLUENCE OF INFORMATION QUALITY AND SYSTEM QUALITY ON THE SUCCESS OF A KNOWLEDGE MANAGEMENT SYSTEM WITHIN A LARGE MULTINATIONAL SOFTWARE ORGANISATION.

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Abstract

Evaluating the success of a knowledge management system is a difficult task for management. Even trying to adopt an agreed definition of success can be a challenge as success can be multi-dimensional and can be assessed from a number of levels within an organisation. Because of this the development of validated metrics, for evaluating knowledge management systems (KMS), is critical from an organisational perspective. This research examines the difficulty in measuring knowledge management systems success by implementing the DeLone and McLean (D&M) model of IS success (1992, 2003) in a knowledge management environment. The results indicate that both Information Quality and System Quality have a positive influence on User Satisfaction and Intention to Use, the results also indicate that this positive influence is necessary for the successful implementation of a KMS within an organisation.

Keywords: Knowledge management, knowledge management systems, DeLone and McLean IS Success Model, Information quality, System quality.

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1 INTRODUCTION

As Organisational Memory and Knowledge Management become a driving force for many organisations, managing these resources becomes vital. The developments in new Information Technology have led the way for the creation of Knowledge Management Systems (KMS). With companies endeavouring to control these new systems, success becomes crucial. It is important to identify the measurements of success so that KMS succeed. The DeLone and McLean Information System (D&M) IS success model has been mostly used to identify the success of Information Systems but rarely Knowledge Management Systems within organisations. This study offers further evidence that this model can be used as a foundation in the search to identify the success of a KMS.

The success of a Knowledge Management System relies heavily on the use of the system (Poston, 2005) which Wu & Wang (2006) believe is attached to System Quality, Information Quality, User Satisfaction and Usage. Actual use is most applicable as a success measure when the use of a system is required (Jennex & Olfman, 2004). However, Lucas, Welke and Konsynski (cited in DeLone 1988, p. 52) state that actual use should only be used as a measure of success when use is voluntary. This is consistent with what DeLone & McLean (2003) state, that use should be included when use is voluntary. Knowledge Management Systems by nature involve voluntary use which would suggest that success can be best measured in this way.

An Organisational Impact is "*the effect of information on organisational performance"* (DeLone & McLean 1992). It was as early as 1988 when DeLone (1988) identified organisational performance as having an impact on Information Systems. Fan & Fang (2006) cite organisational effectiveness, organisational productivity and organisational profitability as three factors that can affect the success of an Information System. Gray (2000) states academics and researchers have been continually researching organisational impacts but little evidence exists on how KMS influences organisational performance. Markus & Keil (cited in Malhotra & Galletta 2004, p. 91) believe it is users and managers that enhance organisational performance and not the system itself.

Knowledge Management has emerged as an Information System that organisations are constantly exploring and adopting. Research on Knowledge Management has mainly focused on the area of knowledge transfer and in recent studies it has been recognised that more diverse research is needed from a system user perspective (Peachey, 2005). Hahn & Subramani (2000) identifies a KMS as an analogous tool, one that is only successful if the users succeed with the tool. Malhotra & Galletta's (2004) study conforms to this idea by stating that no matter how good a system is; users will not use it unless it helps them with their work.

DeLone and McLean (1992) identified six categories of Information System success and they believe that several success measures fall into these categories. This would imply that the success of any Information System can be measured using this model. Not only does it contain many success measures but it is also noted that the categories are "*interrelated and interdependent*" (DeLone & McLean, 1992), two categories can together create a stronger influence on another variable. DeLone and Mclean (1992) believe that scrutinising these relationships will yield superior measures of success. Previous research conducted by Yang, Ting & Wei (2006) revealed that every little research in Information Technology was conducted from a system user perspective. With this in mind this paper focuses on studing the system from the system user's perspective, with users of the system being asked to provide their views on the quality of the information and of the system. The purpose of this paper is to shed light on the factors of Information and System Quality, from the users perspective, influencing the success of a Knowledge Management System.

The paper is laid out as follows; section 2 looks at the theoretical background, section 3 outlines the research method chosen while section 4 presents the results. Section 5 provides a discussion on the results and finally, section 6 concludes.

2. THEORETICAL BACKGROUND

2.1 Knowledge Management

Knowledge has always been an important fundamental resource but it is only in the last decade that companies have started to acknowledge the real benefits of managing it (Wiig, 1997; Ruggles, 1998; Hansen, Nohria & Tierney, 1999; Davies, 2000). The growth in Information Technology (IT) is one of the reasons for this shift (McDermott, 1999). Organisations are beginning to become more concerned about how knowledge is created by their employees and are continually considering ways to capture it. Humans have the capability to grasp and create the knowledge of the organisation (Yeh, Lai & Ho, 2006) while Information Technology has the ability to influence it (McDermott, 1999). However, adopting the correct technology and adjusting the culture may help in creating value within the organisation. Davenport, De Long & Beer (1998) cite that the difference between success and failure in an organisation can ultimately lie on whether the company can manage its knowledge. In the process of endeavouring to manage the knowledge of the organisation, a company must also consider the employees because without them no new knowledge will be created. Massey, Montoya-Weiss & O'Driscoll (2002) reinforce this point by stating that human expertise coupled with exceptional technology can lead to outstanding knowledge assets.

A KMS is a specialised Information System (IS) with capabilities to systematise, facilitate, and expedite company-wide knowledge (Lee, 2005). KMS have fast become a necessity of both large and small organisations and are viewed as a system that encompasses all knowledge related issues (Massey, Montoya-Weiss, & O'Driscoll, 2002). A KMS may be deemed successful when its use helps to achieve organisational goals, and can be viewed as inadequate if it is not used by the people it is intended for. Hoffmann *et al.* (1999) identifies that knowledge owners and future users are important to the success of a KMS. The success of a KMS can indicate how well an organisation can manage its knowledge (Davenport, De Long & Beer, 1998). Davenport, De Long & Beer (1998) identify several factors that contribute to the success of Knowledge Management projects but state that success is not solely restricted to these. Money (2004) believes success should always begin with the individual. If users don't accept it, the system becomes a failure. Davenport, De Long & Beer (1998) and Massey, Montoya-Weiss & O'Driscoll (2002) identify people and resources as being at the core of any successful Knowledge Management project. Alavi & Leidner (2001) indicate that to increase the usage of a KMS, the system must be designed in a way that users can find high quality material. Not only should it be of a high quality but the knowledge should also be easy to create, transfer and use (Davenport, De Long & Beer, 1998).

2.2 DeLone & McLean Information Success Model

As organisations continue to work in dynamic environments where change is constant (Gray, 2000) measuring the success of an Information System becomes critical. However, Information Systems success is still a construct that many researchers have never got to grips with (Molla & Licker, 2001). The DeLone and McLean Information Systems success model (DeLone & McLean, 1992) has been used by many researchers to measure the success of Information Systems. Despite many of these researchers (Seddon, 1997; Bradley, Pridmore & Byrd, 2006) altering and adding variables to the D&M IS success model, very few studies exist on how this model can affect Knowledge Management Systems. Wu & Wang (2006), Jennex & Olfman (2004) and Kulkarni, Ravindran & Freeze (2006) extended the D&M IS success model to measure Knowledge Management System success. However, there are two reasons why Wu & Wang (2006) believe that more studies need to be carried out, firstly to validate the D&M IS success model as an appropriate measure of KMS and secondly, most studies have focused on principles and case studies with very little on frameworks and models.

The D&M IS success model was developed by DeLone and McLean (1992) to evaluate Information System success and provide a basis for future research. This model is based off the work of Shannon & Weaver (1949) and Mason (1978) containing six measures of IS success. These variables are the result of merging a large number of studies on Information System success. The variables are interrelated rather than independent, see figure 1.

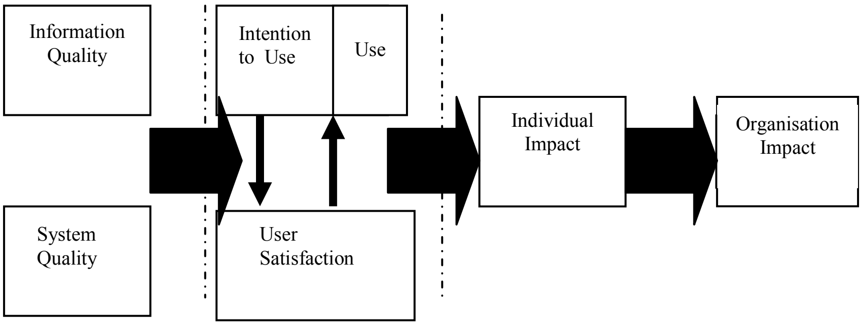

Figure 1: D&M IS Success Model (DeLone & McLean 1992)

System Quality and Information Quality singularly and jointly affect both Intention to Use and User Satisfaction. Intention to Use and User Satisfaction can have an impact on one another while they both can have a direct affect on individual impacts which in turn affects organisational impacts (DeLone & McLean, 1992). Seddon (1997, p. 242) concludes that the D&M IS success model can cause confusion when measuring Information Systems success as it contains "*temporal and causal interdependencies"*. He believes that the Use variable contains up to three meanings, ("*benefits from use, impact of use and future IS use"*) however, after analysing each meaning it is found that only one of these (*benefits from use)* can be applied to the D&M IS success model. Although the 1992 model (DeLone & Mclean, 1992) is referred to as the original model it is by no means a complete model. DeLone & McLean (2003) have since updated this model to include research conducted between 1992 and 2003, see figure 2 Revised D&M IS success model. The variables displayed in figure 3, Adapted D&M IS success model, represent the variables used in this study.

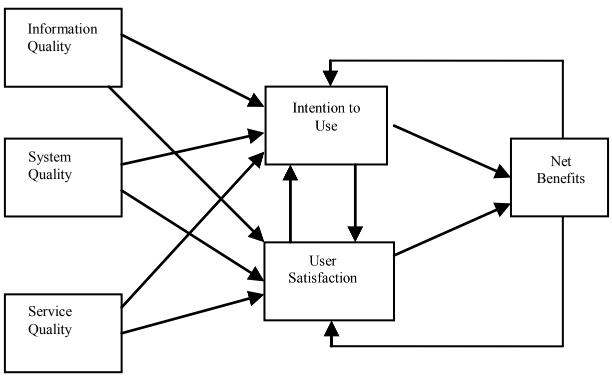

Figure 2: Revised D&M IS Success Model (DeLone & McLean 2003)

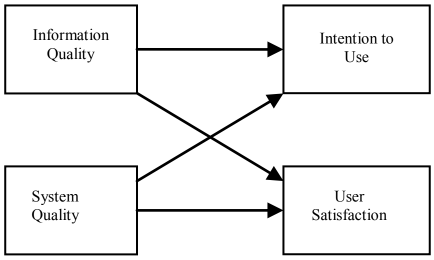

Figure 3: Adopted D&M IS Success Model (DeLone & McLean, 2003)

2.3 Measures of Information System Quality

2.3.1 Information Quality

Information Quality is defined by DeLone & McLean (1992) as "*the measure of information system output"*. It is also known as Knowledge Quality (Wu & Wang, 2006) and referred to as measuring the information produced in a system (Jennex et al., 1998; Maes & Poels, 2006; Yang, Ting & Wei, 2006). Bradley, Pridmore & Byrd (2006) cite that information is the cornerstone of any organisation. There are many different measures of Information Quality, Bradley, Pridmore & Byrd (2006) state that it is important that information is timely, accurate, complete and thorough. Molla & Licker (2001) agree with Bradley, Pridmore & Byrd but also takes account of up-to-datedness, understandability, reliability, relevancy, currency and preciseness. Jennex *et al.* (1998) identifies importance, relevance, usefulness and informativeness to clarity, content, accuracy and completeness as factors contributing to Information Quality while Lee & Kozar (2006) cite relevance, currency and understandability. The most cited dimensions are accuracy, timeliness, completeness, relevancy and reliability.

2.3.2 System Quality

System Quality is defined as *"measures of the information processing system itself"* (DeLone & McLean 1992). In a Knowledge Management context, Jennex (2005) defines System Quality as how well the KMS performs the functions of knowledge creation, storage/retrieval, transfer and application while Wu & Wang (2006) identify System Quality as how well the KMS performs in terms of its operational features. However, Doll & Torkzadeh (cited in Rai , Lang & Welker 2002, p 55) believe that System Quality has been used to measure both ease of use and the degree to which a system is user friendly. Nelson, Todd & Wixom (2005) believe that to-date, System Quality hasn't received as much attention as Information Quality. A reason for this, maybe that System Quality can only be measured when a person uses or interacts with a system (Maes & Poels, 2006). The higher the quality of the system, can often determine the use of the system (Davis, 1989). Literature on Information Systems success identify a number of measures of System Quality such as system accessibility, flexibility, response time, accuracy, reliability and easy of use. Another important criterion for System Quality is the reliability of the system (Molla & Licker, 2001; Qian & Bock, 2005; Bradley, Pridmore & Byrd, 2006; Fan & Fang, 2006; Fan, 2006). The dimensions used in this paper were System Response Time, System Flexibility, Accessibility, Reliability of the System, System Accuracy and Ease of Use.

3 RESEARCH METHOD

The research followed a similar research method to that conducted by Heijden (2003). A multiple item survey instrument was used to measure each of the eleven independent constructs of Information Quality and System Quality and also to measure the dependent variables of User Satisfaction and Intention to Use. This study proposes to examine the dimensions of Information Quality and System Quality as shown in figure 4. By adopting variables, previously used to investigate both User Satisfaction and Intention to Use, an instrument was created to gather data, which in turn was analysed statistically to test a number of hypotheses. The hypothesis were as follows; Hypothesis One, *Information Quality positively influences User Satisfaction*, predicts that there is a significantly high relationship between Information Quality and User Satisfaction; Hypothesis Two, *Information Quality positively influences Intention to Use*, predicts that there is a significant relationship between Information Quality and Intention to Use; Hypothesis Three, *System Quality positively influences User Satisfaction*, predicts that there is a significantly high relationship between System Quality and User Satisfaction and finally Hypothesis Four, *System Quality positively influences Intention to Use*, predicts that there is a significantly high relationship between System Quality and Intention to Use.

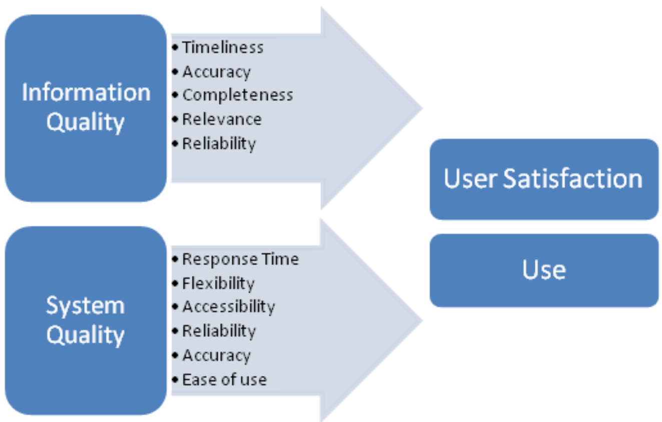

Figure 4: Information and System Quality Instrument Variables

3.1. Research Instrument

A sixty two item survey instrument was adopted with sixty one standardised questions and one open ended question. Of the sixty one questions, four introductory questions will ease the respondents into the questionnaire and will provide some background information. The remaining fifty seven items will analyse each of the four variables of Information Quality, System Quality, User Satisfaction and Intention to Use. These closed questions will allow the respondent to complete the questionnaire effortlessly and allow the author to easily compile the results. The open-ended question at the end will allow the respondent add any other information they deem relevant to the study.

There were eleven multiple constructs used to measure the independent variables of Information Quality and System Quality. Each of the eleven constructs contained five questions each totalling fifty five items. Each statement will be drawn and adapted from previous research papers. The two dependent variables of User Satisfaction and Intention to Use will contain five multiple constructs each. A seven-point Likert scale will be used, where 1 = Strongly Disagree and 7 = Strongly Agree. The instructions will require the respondent to choose one of the seven radio buttons for each answer.

3.2 Research Process

The research instrument was administered to respondents electronically using email and when returned were exported to the Statistical Package for Social Science (SPSS). Within this particular organisation, employees are subjected to similar type questionnaires on a regular basis and it has always provided high response rates in the past. This technique helped to automate the process of manual data entry, reduce costs associated with mail based questionnaires and reinforce the reliability of the findings. The users of the Knowledge Management System will be identified by obtaining a list from a system design profile. The researcher will target each of these groups. A pilot questionnaire was administered to 10 people, a sample of the target audience, this helped to refine poorly worded questions, clarify the task instructions, improve the layout of the form and increase the validity of the questionnaire.

4 RESULTS

The reliability of the multiple data set was examined by using internal consistency statistics, Cronbach's alpha. SPSS 14 was used to compute the mean of each of the thirteen multiple constructs (65 items) into thirteen composite single variables. This ensured that all the multiple constructs were measured the same way reducing the measurement of error. The analysis revealed that all the independent and dependent variables each had an acceptable value of >0.78 except for System Accessibility which had an alpha of 0.619. Although one variable only met the minimum standard required for academic research set out by Hair *et al.* (cited in Bradley, Pridmore & Byrd 2006) the rest of the results exceeded the recommended minimum standard of >0.70 set out by Cramer (1998). The overall average of the sixty five statements had a value of 0.970 which proves to be a strong indication of reliability and well over the recommended measure.

Table 1 displays the Cronbach's alpha for each of the composite constructs that were computed. Each of the four composite constructs indicated a high reliability scale. The two dependent variables of User Satisfaction and Intention to Use showed very strong reliability with alphas of 0.987 and 0.995 respectively.

Instrument (No. of items)	Composite Instrument (No.of items)	Cronbach's Alpha
Information Timeliness (5)	Information Quality (25)	.858
Information Accuracy (5)		
Information Completeness (5)		
Information Relevance (5)		
Information Reliability (5)		
System Response Time (5)	System Quality (30)	.874
System Flexibility (5)		
System Accessibility (5)		
System Reliability (5)		
System Accuracy (5)		
System Ease of Use (5)		
User Satisfaction (5)	User Satisfaction (5)	.987
Intention to Use (5)	Intention to Use (5)	.995

Table 1: Cronbach's Alpha Reliability for Composite Variable Constructs

Regression analysis was used to determine the degree to which the independent composite variables could predict the score of the dependent variables. Two methods of regression analysis were carried out: enter and backward. Using different methods allowed the researcher to conduct analysis by entering the variables into the different models in different ways. By using this technique the same variables were used to identify which model best described the relationship between the independent and dependent variables. The Adjusted R squared, R^2, the F value, the significance (p value) and the beta (β) coefficient were the values calculated for each composite variable, see table 2[3]. The data was ordered by the level of significance, then by the Adjusted R^2 value, which allowed the identification and ranking of the most significant relationships.

[3]ITM = Information Timeliness, IAM = Information Accuracy, ICM = Information Completeness, IRM= Information Relevance, IReM = Information Reliability,
SRTM = System Response Time, SFM = System Flexibility, SAM = System Accessibility, SRM = System Reliability, SACM = System Accuracy, SEOUM = System Ease of Use.

Independent Constructs	Dependent Variables	F	Sig.	R^2	Beta (β)	Adjusted R^2
ITM	USM	$F_{1,30}$ = 20.856	P<.000	.410	.640	.390
IAM	USM	$F_{1,30}$ = 5.603	P<.025	.157	.397	.129
ICM	USM	$F_{1,30}$ = 20.529	P<.000	.406	.637	.386
IRM	USM	$F_{1,30}$ = 17.491	P<.000	.368	.607	.347
IreM	USM	$F_{1,30}$ = 8.678	P<.006	.224	.474	.199
ITM	ITUM	$F_{1,30}$ = 5.687	P<.024	.159	.399	.131
IAM	ITUM	$F_{1,30}$ = 1.983	P<.169	.062	.249	.031
ICM	ITUM	$F_{1,30}$ = 11.421	P<.002	.276	.525	.252
IRM	ITUM	$F_{1,30}$ = 5.513	P<.026	.155	.394	.127
IreM	ITUM	$F_{1,30}$ = 2.902	P<.099	.088	.297	.058
SRTM	ITUM	$F_{1,30}$ = 4.909	P<.034	.141	.375	.112
SFM	USM	$F_{1,30}$ = 16.115	P<.000	.349	.591	.328
SRM	USM	$F_{1,30}$ = 20.757	P<.000	.409	.639	.389
SAYM	USM	$F_{1,30}$ = 16.792	P<.000	.359	.599	.337
SEOUM	USM	$F_{1,30}$ = 12.650	P<.001	.297	.545	.273
SRTM	ITUM	$F_{1,30}$ = 2.352	P<.136	.073	.270	.042
SFM	ITUM	$F_{1,30}$ = 9.140	P<.005	.234	.483	.208
SRM	ITUM	$F_{1,30}$ = 15.008	P<.001	.333	.577	.311
SAYM	ITUM	$F_{1,30}$ = 13.406	P<.001	.309	.556	.286
SEOUM	ITUM	$F_{1,30}$ = 10.430	P<.003	.258	.508	.233

Table 2: Statistical Analysis Results

4.1 Information Quality

4.1.1 User Satisfaction

A combination of the five composite variables of Information Quality was a strong candidate to predict User Satisfaction ("$F_{5,26}$ = 5.844, p = .001, Adjusted R^2 = .439"). Enter regression analysis was also conducted on each of the individual variables. This concluded that all five variables had significant Adjusted R^2 values and each p value was below .05. Of the five variables, Information Timeliness was recognised as being the most powerful individual predictor ("$F_{1,30}$ = 20.856, p = .000, Adjusted R^2 = .390, β = .640") followed by Information Completeness. Backward regression was performed taking User Satisfaction as the dependent variable. The analysis eliminated Information Completeness, Information Reliability and Information Accuracy from the test, leaving Information Timeliness and Information Relevance as the most significant influence on User Satisfaction. By observing the beta coefficient values it can be seen that Information Timeliness (β = .435) is the stronger of the two. . All beta values are quite significant with only Information Accuracy having a negative influence on User Satisfaction. The enter regression carried out revealed that Information Accuracy had an Adjusted R^2 squared value of .129. Table 3 represents the beta values of each of the composite independent variables in ascending order, while figure 5 outlines the overall impact of Information quality on User Satisfaction.

Rank	Variable
1	Information Timeliness
2	Information Relevance
3	Information Reliability
4	Information Completeness
5	Information Accuracy

Table 3: Ranking of the Individual IQ Variables that influence User Satisfaction

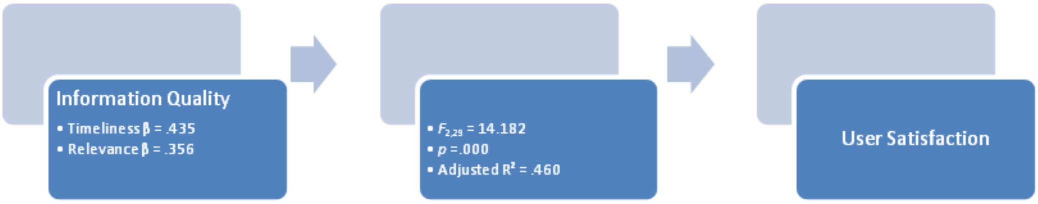

Figure 5: The impact of Information Quality on Intention to User Satisfaction

4.1.2 Intention to Use

The same approach was taken for the other dependent variable, Intention to Use. The five composite variables were tested against Intention to Use. A combination of the five variables together were somewhat associated to Intention to Use (“$F5,26 = 2.101$, $p = .097$, Adjusted $R^2 = .151$, ”). While the probability value is not <.05 it is however, <.01 which is acceptable. Individually, Information Timeliness, Information Completeness and Information Relevance were all significant with a confidence level of <.05. The strongest was Information Completeness (“$F_{1,30} = 11.421$, $p = .002$, Adjusted $R^2 = .252$, $\beta = .525$”). The results of backward regression indicate that Information Completeness is the most influential predictor of Intention to Use with Information Completeness accounting for over 25% of the relationship with Intention to Use and with the F value (“$F_{1,30} = 11.421$”) indicating that Information Completeness was the strongest composite variable. The beta value (β=.525) for Information Completeness indicates the strength of its influence on Intention to Use. Table 4 represents the beta values of each of the composite independent variables in ascending order and figure 6 outlines the overall impact of Information quality on Intention to Use.

Rank	Variable
1	Information Completeness
2	Information Reliability
3	Information Accuracy
4	Information Relevance
5	Information Timeliness

Table 4: Ranking of the Individual IQ Variables that influence Intention to Use

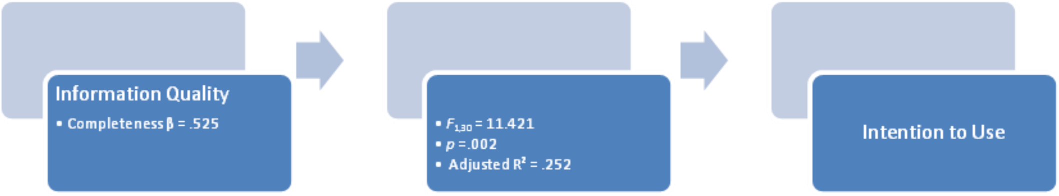

Figure 6: The impact of Information Quality on Intention to Use

4.2 System Quality

4.2.1 User Satisfaction

There were six composite variables identified for System Quality. System Accessibility was removed from the analysis because of its low alpha of .619. The first test involved combining the remaining five variables to identify if they had a significant influence on User Satisfaction. This test was a strong predictor of User Satisfaction ("$F_{5,26}$ = 7.544, p = .000, Adjusted R^2 = .514"). Enter regression was also performed on each of the variables separately and all variables had a p value of less than .05. System Reliability, System Accuracy and System Flexibility were the more dominant variables. Backward regression identified System Ease of Use and System Accuracy the two strongest indicators of User Satisfaction. Although, the enter regression identified System Reliability as being the strongest individual composite variable, after eliminating it during backward regression it resulted in a higher F value ($F_{2,29}$ = 14.162). Table 5 provides a ranking order of the most influential System Quality variables and figure 7 outlines the overall impact of System Quality on User Satisfaction.

Rank	Variable
1	System Accuracy
2	System Ease of Use
3	System Reliability
4	System Response Time
5	System Flexibility

Table 5: Ranking of the Individual SQ Variables that influence User Satisfaction

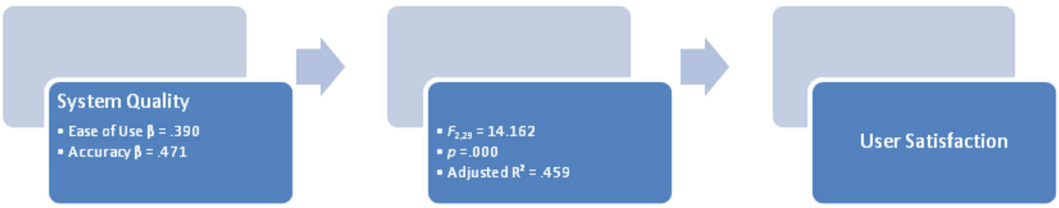

Figure 7: The impact of System Quality on User Satisfaction

4.2.2 Intention to Use

Here again only five of the six composite variables were used. Enter regression was conducted to evaluate if the combination of the five variables could have a significant influence on Intention to Use. The results supported this theory ("$F_{5,26}$ = 6.017, p = .001 , Adjusted R^2 = .447"). Individually, System Reliability and System Accuracy were marked as the two most influential variables both with p values of .001. While

System Response Time is reported to negatively influence Intention to Use with a *p* value of .136. Backward Regression was performed on Intention to Use and revealed that System Ease of Use, System Accuracy and System Response Time were the highest contenders to predict Intention to Use ($F_{3,28} = 8.852$). System Accuracy was revealed as having the strongest beta ($\beta = .603$). It can be noted that enter regression found System Response Time to be the least likely variable to influence Intention to Use,. The beta figure indicates that is it a relatively poor predictor of Intention to Use, however the probability ($p = .082$) value is still less than 0.1. Table 6 below ranks each of the five variables based on their beta value. System Accuracy is recognised as having the most influenced on Intention to Use. While figure 8 outlines the overall impact of System Quality on Intention to Use.

Rank	Variable
1	System Accuracy
2	System Ease of Use
3	System Response Time
4	System Reliability
5	System Flexibility

Table 6: Ranking of the Individual SQ Variables that influence Intention to Use

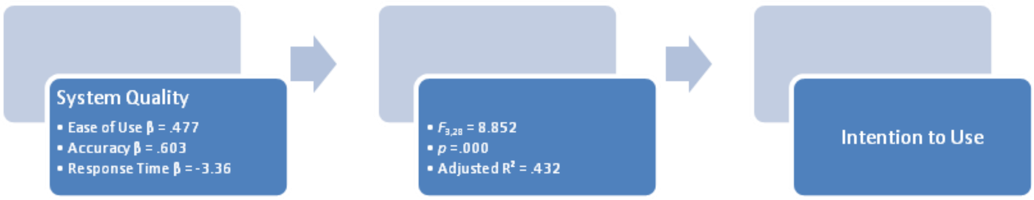

Figure 8: The impact of System Quality on Intention to Use

4.3 Hypothesis Testing

Four hypotheses were developed from this study and were tested using linear regression analysis. Hypothesis One, *Information Quality positively influences User Satisfaction*, predicts that there is a significantly high relationship between Information Quality and User Satisfaction. The result of this hypothesis reveals that Information Quality is a significant predictor of User Satisfaction. Information Timeliness and Information Completeness account of 46% of the relationship with User Satisfaction. Hypothesis Two, *Information Quality positively influences Intention to Use*, predicts that there is a significant relationship between Information Quality and Intention to Use. Information Completeness dominantly influences Intention to Use (25%). Hypothesis Three, *System Quality positively influences User Satisfaction*, predicts that there is a significantly high relationship between System Quality and User Satisfaction. System Ease of Use and System Accuracy together predict over 45% of User Satisfaction. Finally, Hypothesis Four, *System Quality positively influences Intention to Use*, predicts that there is a significantly high relationship between System Quality and Intention to Use. System Ease of Use, System Accuracy and System Response Time are strongly correlated with Intention to

Use, representing 43% of the relationship. Overall the findings supported the four hypotheses.

5 DISCUSSION

This paper provides an example of using DeLone and McLean IS Success Model to investigate the success of a KMS within a large organisation. The research found that the factors of Information and System Quality and their influences on User Satisfaction and Intention to Use can affect the success of the system. Only when an organisation works in a very dynamic environment where decisions are made and changed daily, the requirement of information to reflect these changes becomes crucial to its success. Outlined below is a brief discussion of the constructs which were shown to impact on Intention to use and User Satisfaction

The importance of Information Timeliness can change according to the nature of the Information System. For a KMS to remain operational, the organisation must heavily invest in making sure that the information is up-to-date and that it provides the users with exactly what they need. Information Timeliness can have a great bearing on system use as system obtainers get no benefit from using a system that is not up-to-date. Also timely information to one person may not be timely for the next. This leads back to the fact that there are different users of the system each with different user requirements. Information Relevance is another important variable as it can determine if the information in a system is helpful to the work of a system user. If a user does not find the information in a KMS to be meaningful or important to the work that they do, they will not use it. The nature of a KMS involves sharing information and knowledge with different users. Those that contribute information to the system must input only information they deem relevant to others. However, if there is a large group of users, it can be hard to cater for all their needs.

Information Reliability and Information Completeness were not as important but were vital to determine User Satisfaction. Users of the KMS found Information Accuracy to be the least likely variable to affect User Satisfaction. This is a rather surprising finding considering Accuracy was the most cited variable to measure Information System success. Overall, the findings indicate that Information Timeliness and Information Relevance represent a valid measure of User Satisfaction. These two variables are the turning points which will signify if a user is satisfied with the KMS.

The main factor to influence users to use a system seems to be the completeness of the information. The more complete the information the bigger the possibility users will use it in the future. Users can become frustrated if the information available does not provide a full picture of the issue or topic that they require information on. This will inevitably lead to the non-use of the system. As with KMS, the information is usually gathered from different locations and might never be complete. The descriptive statistics revealed that there were not too many users of the KMS. This would suggest that the information in the system was not complete. To overcome this issue, an organisation must deploy a strategy to ensure that information that is entered into the system is complete.

Information Timeliness and Information Relevance were also considered important to the intention to use a system. An organisation must consider that these two variables can increase the usage of the system. As there are seven different user groups of this particular system, the information in the system must be of use to each of these users. It can prove to be a difficult task to ensure that the information is both complete and timely as well as being relevant to each system user. Information Reliability is somewhat associated with Intention to Use but not as highly correlated as Information Completeness. Information Accuracy does not appear to cause much concern to users. This demonstrates that it is of no importance to Intention to Use ($p<.169$). Information Accuracy was also considered to have a minimal affect on User Satisfaction.

Individually, all variables demonstrated high correlations with User Satisfaction. Together, System Accuracy and System Ease of Use accounted for 45.9% of the variance between System Quality and User Satisfaction with Accuracy being the stronger of the two. System Accuracy indicates that the system itself must be precise at all times to ensure User Satisfaction. The unimportance of Information Accuracy in section 5.2.2 is a striking observation to that of System Accuracy. This suggests that although Information Accuracy is not important System Accuracy is. Users of the Knowledge Management System also consider System Ease of Use as a strong factor when determining User Satisfaction. The Literature Review also revealed that the easier a system is to use, the more likely it is that the system will be adopted by the users. Considerable thought must be given to the development of a system when ease of use is significant.

Although System Reliability was identified as being the most important individual variable, it was identified as having some importance to User Satisfaction during backward regression analysis. It was indicated by Nelson, Todd & Wixom (2005) in the Literature Review that the dependability of a system is based on how often a user will use the system. System Reliability appears to be third influential variable to influence User Satisfaction. This suggests that system users regard the system as being dependable, secure and consistent.

System Accuracy, System Ease of Use and System Response Time collectively had the strongest relationship with Intention to Use (43.2%). This stronger relationship adds to the interdependency of the success measures. This research indicates that an organisation must ensure that the correctness and preciseness of the system is always maintained at a high level at all times to ensure success. Whether or not a system is easy to use can be crucial to Intention to Use. System Ease of Use has been identified to investigate the acceptance and adoption of an Information System. Both Accuracy and Ease of Use were also considered extremely significant to User Satisfaction. Although System Response Time has an unacceptable probability value, it has been identified as having a strong association with Intention to Use. As a Knowledge Management System evolves and the information within the system is built up only then will the System Response Time gradually decrease. The Knowledge Management System used in this research is still relatively new therefore, the amount of information it contains is still quite small.

Overall, the results indicate acceptance of the four hypotheses and illustrate that the factors of Information and System Quality, when viewed from the users perspective, can influence the success of a Knowledge Management System

6 CONCLUSION

This paper investigates the factors of Information and System Quality, from the users perspective, and examines their influence on the success of a Knowledge Management System using the DeLone and McLean IS Success Model. The findings reach a similar conclusion to those of previous papers that have studied the DeLone and McLean IS success model within the Knowledge Management domain. The research identified a number of the factors of Information and System Quality and their influences on User Satisfaction and Intention to Use can affect the success of a KMS.

The DeLone and McLean is a well recognised model to identify the success of an Information System and research including the findings of this paper, appear to indicate that it is an acceptable model to measure the success of Knowledge Management Systems. It is only in recent years that the concept of Knowledge Management has crept its way into organisations, which may indicate why many have not been as successful as some might have hoped. Now that organisations have a better understanding of how knowledge gets transferred, there is a greater understanding of how to managing it, however, this will not happen overnight. In the meantime, the results of these findings and the factors identified as influencing the success of a KMS from a users perspective, should both guide and assist those wishing to implement KMS within organisations.

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