The Role of Information Systems in Supporting Knowledge Management in King Abdulaziz University: Case Study *

Roaa Nabil Najdi and Dr. Nabil Abdullah Komosany
Roaa-najdi@gmail.com Nkomosany@kau.edu.sa
King Abdulaziz University, Saudi Arabia

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Abstract

The purpose of this study is to explore the role of information systems in the implementation of knowledge management, at King Abdul-Aziz University (KAU) in Jeddah, by highlighting the importance of information systems and their implementation of the knowledge processes. The researcher used the case-study method to explore the importance of information systems in supporting the implementation of knowledge management at the university. Moreover, the study has used the questionnaire as a tool for collecting information and obtaining feedbacks from the administrators at the university, and a random sample was chosen to identify the study community. The study resulted that there is a statistical indication of the importance and degree of the use of electronic systems in the university by the administrators. The study sample members believe that the university is keen to provide information systems, where systems analyze data and convert them into knowledge information that benefits the senior management at the university. Members of the study sample emphasize the importance of electronic information systems at the university, which in turn saves time and effort in extracting information, reports, statistics and providing them easily to senior management. The study also concluded with some recommendations, such as emphasizing the importance of knowledge management as one of its top priorities, spreading the knowledge culture, instilling a vision of knowledge among individuals, and emphasizing the importance of information systems.

Key words:
Knowledge Management, Information Systems, case-study method

1. Introduction

This century was distinguished by the rapid and many developments in various fields of life. Work methods developed in various sectors, and the latest developments were what is known as the information revolution that resulted in increased interest in information as one of the important resources in various organizations, and thus information systems developed, which have a pivotal role in the competition of organizations, as through which organizations can achieve a high competitive advantage, especially when information is viewed as an essential resource of an organization. Alter (2005 & 1999) showed [2] that information systems affect work systems in institutions because they provide them with the necessary information to implement and accomplish the required work and to standardize and automate these works. He has added that information systems affect work systems collectively, because they support sharing of information between several work systems, in addition to coordinating work between them, and achieving work integration in these systems. The more reliance on information systems in the implementation of work systems, the greater the automation of work, and thus the reliance on information systems becomes greater until the information system becomes the same as the work system, and thus the work becomes completely dependent on the information system.

Since the change and development in the field of application of information systems was, in fact, radical and accelerating over the past decade, as modern information technologies have highlighted new applications of information systems and new standards for these systems that contribute to the preservation and use of knowledge. Hence the importance and role of knowledge and the creation of skills, experiences, and cognitive competencies that can transform the outputs of these systems into knowledge to be used in the process of planning, organizing, controlling, making decisions, and carrying out operational functions. Hence, the complementary and interconnected relationship between information systems and their role in implementing knowledge management based and originally dependent on the outputs of the systems and transforming this information (outputs) into knowledge components (part of which is apparent knowledge and the other part is latent knowledge), meaning that the organization benefits from it in building its competitive capabilities.

King Abdulaziz University seeks to keep pace with the Kingdom's vision (2030) by providing systems, applications, programs and electronic services that facilitate the educational, administrative and financial process. It has also taken care of the continuous improvement of the infrastructure, the upgrading of the security and information

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level at King Abdulaziz University, and the preparation of integrated solutions and services with high specifications, as it has carried out many services and programs that contribute to the improvement of all available works.
The most important of these services and programs include the following:

1. Launching (7) information and decision-making support systems to contribute to the progress of the development process, by continuously providing accurate and updated data to decision-makers.

2. Launching systems and software:

- Automated matching service for the study plan on the student page (Odus Plus)
- The new version of the comprehensive inquiry program with new features, electronic transactions, study plan (for the student).
- A visitor admission portal in order to provide an opportunity for an internship year student at other universities to apply for an internship year study at the Faculty of Medicine at King Abdulaziz University.

3. Community partnership:

- Adding the application service to the student's academic endowment subscription in the Plus Odus system.
- Technical awareness (for students via e-mails).
- Guiding the student towards appropriate career and professional options.
- Cooperation with relevant third parties in the field of community service:
- Spreading the culture of awareness of the risks of cybercrime through the media.

Issue of the study:

Information systems play an important role in knowledge management, whether in producing, acquiring, disseminating, storing and retaining knowledge for use when needed. It plays a big role in coordination with the human cadres in many applications such as document processing, decision support systems, and expert systems (Abu Isha and Mansour, 2012) [3]. There is a clear trend at the present, towards understanding the role of information systems in the success of the business and the development of universities, and towards how to invest information in achieving competitive progress, while there is a growing sense of the importance of the information system in achieving maximum benefit from the use of information within the university. One of the most important components and requirements of organizations, in the era of knowledge, is the imperative of having a strong infrastructure represented in adopting information systems that apply knowledge management. In addition, organizations are required to reconfigure themselves and engineer their business to keep pace with the model of a knowledge-based organization that produces, disseminates and uses knowledge (Noy, 2011). (4) Accordingly, the study problem can be formulated in answer to the following main question: What is the role of information systems used at King Abdulaziz University in Jeddah in supporting knowledge management implementation?

The importance of the study:

The topic of knowledge management has witnessed great momentum in the past years by a large number of researchers. Most of the studies focused on knowledge management activities such as sharing, storing, distributing, and using knowledge within organizations (Gold et al., 2001) (5), with the continuous development of information and communication technology and its availability at reasonable prices, many business enterprises have begun to use information systems and integrate them in their activities as a means to facilitate the efficient flow of knowledge between their various departments (Ke & Wei, 2006) [6] .Both Kuo & Ye (2010) [7] indicate that an effective knowledge management system means that workers within the organization can access knowledge and apply it to improve the performance of their operations that despite the huge investment in information technology infrastructure that aims to improve the utilization of knowledge. However, some studies have shown that many institutions did not achieve the desired results. For the sake of continuing to advance the level of knowledge at the university, preparing it to receive the requirements of the third millennium, and to achieve a quality environment capable of facing the cognitive challenge, through the production, consumption, assimilation, and utilization of knowledge. Hence, the importance of this study appears in that it focuses on applying that study to the most important and highest educational scientific institution, which is King Abdulaziz University in Jeddah. The importance of this study is focused on many points that we summarize as follows:

- Supporting studies that research information systems and their importance for organizations in applying knowledge management and its processes, specifically in university environments, as one of the studies, which is concerned with the importance of using information systems in educational institutions, especially at King Abdulaziz University in Jeddah.

- Supporting applied studies in the field of knowledge management in educational institutions due to the scarcity of Arab and local studies according to the researcher's knowledge in this field.

- Reflection of the results of the study to improve the application of knowledge management in order to achieve success and build competitive advantage and is reflected in the position of the university locally and internationally.

Therefore, this study comes to reveal the role of information systems and the degree of their use in the university, and the extent of their reflection on the ability of its employees in how to deal with information systems, their good use, and methods of employing them as systems, instructions, laws, and communication channels of both internal and external types.

Objectives of the study:

The main goal of this study is to answer the main question raised in its problem, which is what is the role of information systems in supporting the application of knowledge management at the university, which allows raising the capabilities of the university and the individuals working wherein, in order to manage it in a way that enables it to rationalize its decisions and to achieve the appropriate position and competitive advantage in the environment in which it is active. Therefore, this study seeks to achieve the objectives:

1. Learn about the information systems applied at King Abdulaziz University.

2. Learn about the suitability of current information systems and their importance in activating knowledge management from the viewpoint of its users at King Abdulaziz University.

3. Monitor the extent of application of knowledge management processes using information systems at King Abdulaziz University.

4. Learn about the challenges facing the application of knowledge management at King Abdulaziz University.

Study questions:

To answer the main question of the study: What is the role of information systems in supporting the application of knowledge at the university? In order to achieve the goals of this mission, these questions are branched out from this question:

- What is the degree of use of information systems by administrators at King Abdulaziz University?
- What is the degree of importance of current information systems and their suitability in activating knowledge management from the point of view of administrators at King Abdulaziz University in Jeddah?
- What is the degree of application of information systems used for knowledge management processes at King Abdulaziz University?
- What is the degree of challenges facing the application of knowledge management at the university?

Study approach:

The study followed the descriptive method of research in order to describe the phenomenon as it exists in reality and is concerned with describing it accurately and expresses it in a qualitative or quantitative expression.

The researcher chose this approach (the descriptive approach) because it is more appropriate to the nature of the study, as it is the most suitable choice with its objectives and the most consistent with the nature of the problem being studied.

The descriptive method has been linked since its inception with the study of problems related to human cases (Obaidat et al., 2002) [8]. The two researchers will use this approach to identify the information systems used at King Abdulaziz University in Jeddah.

In order to reveal the role of information systems in the application of knowledge management at King Abdulaziz University from the point of view of its employees, in terms of measuring the importance of systems and the extent of their application, by which a sample of the study community members is questioned and the data collected is analyzed so that the final result of the study can be reached.

The study sample:

Due to the large sample size, which numbered (1468) administrators from King Abdulaziz University in all sectors of the university, the two researchers selected a stratified sample from the independent deanships of the university.

According to SURVAY MMKY's method of determining the sample size, administrators and administrators were counted in the independent departments, whose number reached (300) individuals. The two researchers distributed the main questionnaire for the questionnaire in the first stage through an electronic link through Google's electronic services, and the responses were weak, reaching (50) responses. Then the link was made available again through

the WhatsApp group, in which the responses rose to (120) responses. In a final attempt by the researchers, personal visits to the deanships were carried out through the distribution of paper questionnaires in which the responses rose to (203), which is an encouraging rate to conduct an objective study whose results can be generalized. It is worth noting that the two researchers revised the questionnaire in order to revise it before distributing the final version of the study sample by (3) faculty members in the Department of Information Science at King Abdulaziz University.

Previous studies

The two researchers reviewed the intellectual production observed in order to reinforce the study they are doing in terms of reviewing the intellectual production, both printed and electronic. Among the studies that dealt with the subject of the study in one way or another, the following: Basnawy study (2017) (9) entitled "Methods for assessing knowledge management systems", as it aimed to identify a list of the best knowledge management systems in the world according to studies and evaluation of agencies and companies, and the researcher reached through it to identify a group of knowledge management systems that were evaluated from several entities, as well as identifying the characteristics and features of each system, and the researcher used the documentary approach and content analysis that dealt with knowledge management systems and their evaluation criteria and extracting the most appropriate criteria for evaluation. The comparative approach was also used to make a comparison between a group of systems, and observation was used as a tool in comparison by reviewing knowledge management systems, and it came to a proposed conception of an integrated system, which is the optimal support for all knowledge management processes. The research concluded that knowledge management systems, when applied in organizations, depend heavily on the actual needs of the organization, while the organization must play its role in evaluating the appropriate system for its needs.

Also, the study of Jobran and Al-Mansouri (2015) [10] entitled "The Degree of Application of Knowledge Management Operations at Sultan Qaboos University in the Sultanate of Oman from the point of view of its faculty members". This study aimed to define the degree of application of knowledge management processes at Sultan Qaboos University in the Sultanate of Oman from the point of view of its faculty members. The study population may consist of all faculty members in the scientific and humanitarian colleges of Sultan Qaboos University. The sample of the study consisted of (207) faculty members, and in order to achieve the objectives of the study, a questionnaire was prepared that consisted in its final form of (36) paragraphs, distributed into five areas: Knowledge diagnosis, knowledge generation, knowledge storage, knowledge distribution, and application of knowledge according to application (2001) Bhatt. The results of the study showed that the degree of application of knowledge management processes at Sultan Qaboos University in the Sultanate of Oman from the viewpoint of its faculty members is moderate. The study also found that there are no statistically significant differences at the level of significance (α 05.0) between the averages of the responses of faculty members in the degree of application of knowledge management processes at Sultan Qaboos University due to the impact of gender, academic rank and nationality variables, while there were statistically significant differences at the level of significance (α 05 05.0) between the mean responses due to the effect of the years of experience and college variables. In light of the results of the study, the two researchers made a number of recommendations.

One of the most important of these was the importance of establishing the concept of knowledge management and its importance among university employees, and the need to develop a plan to consolidate the concept of knowledge management and best practices in the field of knowledge management and its importance, programs and applications through training programs, discussion panels, seminars and scientific conferences aimed at the university with the need to pay attention to infrastructure and technology and allocate resources in both financial and intellectual parts to establish effective communication networks. Also, Batwil study (2015) [11] entitled "Sharing administrative, financial and technical knowledge among workers at King Abdulaziz University for each of the sectors of administration, financial affairs, and the Deanship of Information Technology", through which a study of the extent of the reflection of knowledge sharing on business performance in the university's sectors was studied.

The exploratory study demonstrated the existence of knowledge sharing in the three sectors. The study gave some recommendations, most notably the university's development of a written strategy for knowledge management, which supports knowledge sharing among employees and the establishment of a social network within the university's departments for knowledge exchange. It also recommended building databases and expert systems that contain accumulated knowledge and experience and making them available to all employees. There is a study prepared by Abbas and Ali (2013) (12), which aimed to identify the reality of applying knowledge management systems at Taif University and the most important organizational, human and technical requirements that contribute to the application of knowledge management in the university.

The two researchers used the descriptive approach to monitor the actual reality of knowledge management systems applications at Taif University.

A questionnaire was designed and applied to a sample of (204) male faculty members and (102) female faculty and two scientific colleges (boys and girls) and two theoretical colleges (boys and girls) at Taif University. One of the most important results of the study was the necessity to create an electronic database or magazine in each college to display the most important research for faculty members, and the need to invest and stimulate the university's teaching competencies in activating knowledge management systems and transforming them into a tangible reality. As for the study of Al-Qurashi (2012) [13], which aimed to demonstrate the importance of knowledge and the concept of its management and the most important contemporary global trends in the use of information and communication technologies to activate its management in contemporary educational organizations, as well as the impact of the use of information and communication technologies on knowledge management processes, monitoring the current reality to determine the degree of response of Saudi university employees towards the use of information and communication technologies in activating knowledge management, and finally arriving at a proposed vision for activating knowledge management using information and communication technologies in Saudi universities. The researcher used the analytical descriptive approach and designed a questionnaire as a tool to collect information from the study population, which numbered 857. To obtain the field results, the data were processed by statistical methods, frequencies, and percentages - arithmetic averages - Cronbach's alpha coefficient - Pearson correlation coefficient - analysis of variance.

The study reached a set of results, the most important of which was that the researcher presented a proposed scenario to activate knowledge management in Saudi universities using information and communication technologies. The perception includes the principles, trends and activation mechanisms necessary to support the trend towards knowledge technologies. The researcher indicated that knowledge technologies are one of the pillars of scientific research and the transition to a community of knowledge technologies and that the use of knowledge technologies contributes to developing knowledge assets at the university. The study recommended the necessity of adopting different knowledge techniques as an essential element in Saudi universities, as they are among the most important educational organizations in society. Abu Ali and Al-Thaybat provided a study (2012) (14) aimed at explaining the role of information systems in transferring knowledge, and the role of knowledge-support systems in enabling individuals in the organization to access the knowledge of this organization, which is represented by facts, sources of information, and solutions to problems. On the other hand, individuals share the knowledge within them and in the files in which their experiences have been recorded and the appropriate solutions to the problems, thus forming a new accumulation of knowledge through which they can create new ideas. The study concluded, through the theoretical literature on the topic, that systems, with all their dimensions and capabilities, are important and key in the transfer of knowledge and participation therein. Then the study of Sami Hanouneh and Al-Awadi (2011) (15), entitled "Applications of Knowledge Management in Higher Education Institutions". The study aimed to present an intellectual framework for applying the concept of knowledge management in higher education institutions based on reviewing and examining a set of theoretical studies and literature published in relevant books and magazines.

The study focused on the topic of knowledge management, which is considered one of the modern management trends in the Arab environment in particular, and it provided an intellectual framework for applying the concept of knowledge management in higher education institutions. Then the most important factors that help to achieve success and the difficulties that may face the application of knowledge management in higher education institutions were reviewed, and the study concluded with a summary that included the most important things discussed in addition to presenting some recommendations that contribute effectively to activating knowledge management applications in higher education institutions. Among the recommendations reached by the study is that higher education institutions, with what they possess in terms of the human resources and technologies they possess, and the resources and information systems they have, and what they contribute to the service of society, are organizations that produce knowledge, as they are more than others equipped to adopt knowledge management. As for the study of Eisan and Al-Ani (2008) [16], the study aimed to uncover the role of information technology in knowledge management in the Faculty of Education at Sultan Qaboos University from the point of view of its employees. A questionnaire has been prepared to consist of 56 items that reflect the four basic elements of knowledge management, which are organizational culture, information technologies, organizational structure and organizational leadership.

The study population consisted of all administrators, technicians and members of the academic staff in the Faculty of Education at Sultan Qaboos University, which numbered 150 individuals, and to analyze the data, arithmetic averages, standard deviation and single-contrast analysis were extracted. The study concluded several results, the most important of which is the need to establish a think tank and decision support by creating a database and information systems capable of providing its administration with the quantitative and qualitative information it needs in a timely and appropriate form at all administrative levels, as it is one of the basic components in knowledge management. Likewise, there is a need to rely on methodologies, methods and techniques based on

simulation and the employment of artificial intelligence and expert systems in order to achieve intellectual coordination among the employees of the Faculty of Education.

There is a study conducted by Al-Naqeeb (2007) (17), which aimed to identify the degree of use of knowledge management systems in the universities affiliated with the Education City in Qatar. The study also dealt with the role of automated systems in managing institutional knowledge and their applications, and the difficulties facing institutions to benefit from these systems. The study presented the reasons for these difficulties and proposals for their solution. The importance of the study lies in knowing the suitability of electronic knowledge management systems in developing the work of institutions, as knowledge technology has become to play a pivotal role in knowledge management programs for enterprises through its ability to accelerate the process of knowledge production and transfer. The study sample amounted to (322) of the employees working in these institutions distributed among the universities that make up the Education City.

The study reached many results, the most important of which was that the knowledge management system helps cooperation and coordination between the different departments in exchanging information in order to achieve common goals and that these systems meet all the employees' needs for accurate and correct information within the organization.

Table No. (1) [15] systems used by administrators at King Abdulaziz University

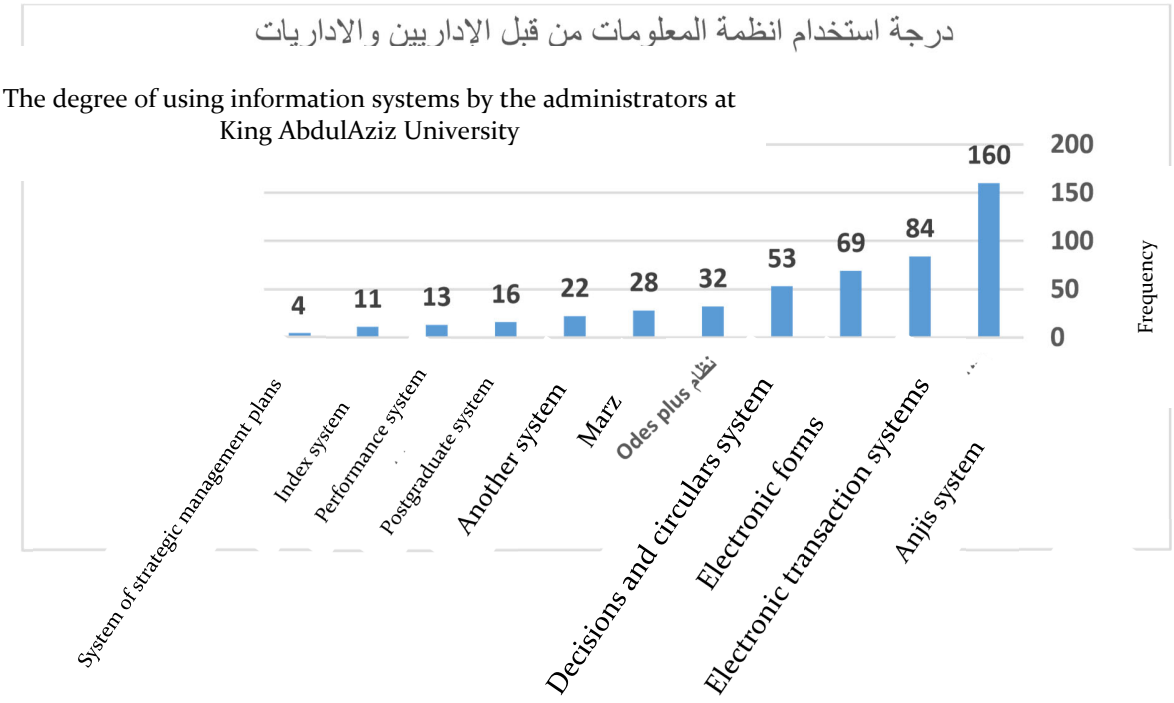
The processes that take place using the system (identifying, storing, distributing, and applying) knowledge	**Definition of the system**	**System name**
Knowledge identification, knowledge preservation and knowledge sharing	It is a content management system established by King Abdulaziz University according to its scientific needs and capabilities. It is a content management system of its own on the Internet specialized in scientific fields and works in several languages. The Marz system includes a wide range of systems.	**Marz**
Knowledge application	It helps to monitor the progress of the projects and tasks of the strategic plan adopted by the University of King Abdulaziz automatically, so that this program manages all the projects supported by the university and measures the actual period for them and compares them with the expected period, and monitors the completion rate first-hand in order to enable good follow-up and supervision by the plan officials.	**Strategic plans management system**
Knowledge preservation, knowledge sharing, and knowledge application	The "Anjis Plus" project is a project to implement the SAP system at the university, and the SAP program is an abbreviation of the word System, Application & Products, which is a complete system that provides the university with ready-made and comprehensive practical solutions so that it can link all university departments in one system that eliminates the use of paper and other traditional systems. It will be possible to perform any financial or administrative process while sitting in front of your machine without making any effort	**Anjis**

Knowledge preservation	It is an electronic system for managing the student transactions between service centers in different university sectors flexibly and dynamically way, and the system saves time and effort for the student and employee.	**Electronic transaction system**
Knowledge storage, knowledge sharing	It is a system of Internet pages that enables users to use a set of services related to academic affairs in an easy-to-use environment.	**Odes plus**
Knowledge sharing, knowledge application	This system provides the possibility of extracting the financial, administrative and academic reports of the university, to assist the various sectors and higher management in making decisions, and logging into the system according to specific powers of higher management	**Performance management**
Knowledge preservation, knowledge sharing, knowledge application	It provides a holistic picture of the acceleration of the educational process in terms of academic, financial, administrative and technical aspects, by providing the appropriate environment and solid ground for sound decision-making by highlighting the strengths and weaknesses of the system to make more efforts to raise the level of quality in all areas in areas with poor services and to know the extent of the current development and improvement, and includes the category used for the system, the leaderships, the relevant decision-making bodies, and the authorized persons.	**Index**

The first question of the study questions:

What is the degree of use of information systems by administrators at King Abdulaziz University? It is clear from the graph that the completed system represents the highest percentage of usage according to the users' responses to the university's electronic systems, as the number of its users reached (160) users with a percentage of (79%) of the sample size. This system provides many electronic services to the employee, covering human and financial resources and electronic services for the employee. It is directly followed by the degree of use is the electronic transaction system, where the number of users reached (84) users out of the sample size of (203), i.e. 41% of the total number of users. We also note that the lowest degree of use of the university's electronic systems is the system of strategic plans, as the number of users is only (4) users and this is due to the nature of the system's work for a specific category of administrators and for serving the university's strategic plan only. The average degree of use of information systems by administrators and administrators at King Abdulaziz University is 45 employees and a standard deviation of (46), and this is in the university.

The statistical significance shows the importance and degree of use of the university's electronic systems by administrators.



The Second question of the study questions:

What is the degree of importance of current information systems and their suitability in activating knowledge management from the point of view of administrators at King Abdulaziz University in Jeddah? By reviewing the table of averages for the second axis of the study questions, the statements with numbers (7, 11, 13, 16, and 15) represent the highest averages between (1.60 and 1.53) with standard deviations between (67 and 73). These expressions reflect the importance of electronic information systems in evaluating operations and jobs and help to develop employees by providing information devices and systems that analyze data and convert them into knowledge information that benefits the university's senior management. Expressions (6, 1, 4, and 9) also represent the importance of electronic information systems in the university to saving time and effort in extracting information, reports and statistics and making them available to senior management easily. These expressions came in the last order according to the arithmetic averages and standard deviations of the respondents, where the average of the answers ranged from (1.13 to 1.22), which confirms the existence of statistical evidence on the suitability of information systems in activating knowledge management processes.

Table No. (2) Use of information systems

Percentage	Repetition	System user	System name
%86	175	Not applicable	**Marz**
%13.8	28	Applicable	

%84.2	171	Not applicable	**Odus plus**
%15.8	32	Applicable	
%98	199	Not applicable	Strategic plans management system (strategic Marz)
%2	4	Applicable	
%93.6	190	Not applicable	**Performance management system**
%6.4	13	Applicable	
%21.2	43	Not applicable	**Anjis system**
%78.8	160	Applicable	
%94.6	192	Not applicable	**(Mu'sher) Index system**
%5.4	11	Applicable	
%58.6	119	Not applicable	**Electronic transaction system**
%41.4	84	Applicable	
%92.1	187	Not applicable	**postgraduate system**
%7.9	16	Applicable	
%66	134	Not applicable	**Electronic forms**
%34	69	Applicable	
%73.9	150	Not applicable	**Circulars and decisions system**
%26.1	53	Applicable	

It is evident from Table No. (2) that most of the sample members use a system completed as the most used system, as the number of its users reached (160) individuals with a percentage of (78.8%) as shown in the graph. This system is considered one of the university's administrative systems, and what the percentage mechanism has reached is considered logical, as the university's employees use a system that has been completed on a daily basis as it deals with the requirements of employees and employees of vacations, directives, information about the employee, statements and other services provided by the system, followed by the electronic transactions system. The strategic plans management system comes in the last place, as it is a system that is used more by higher administrative bodies.

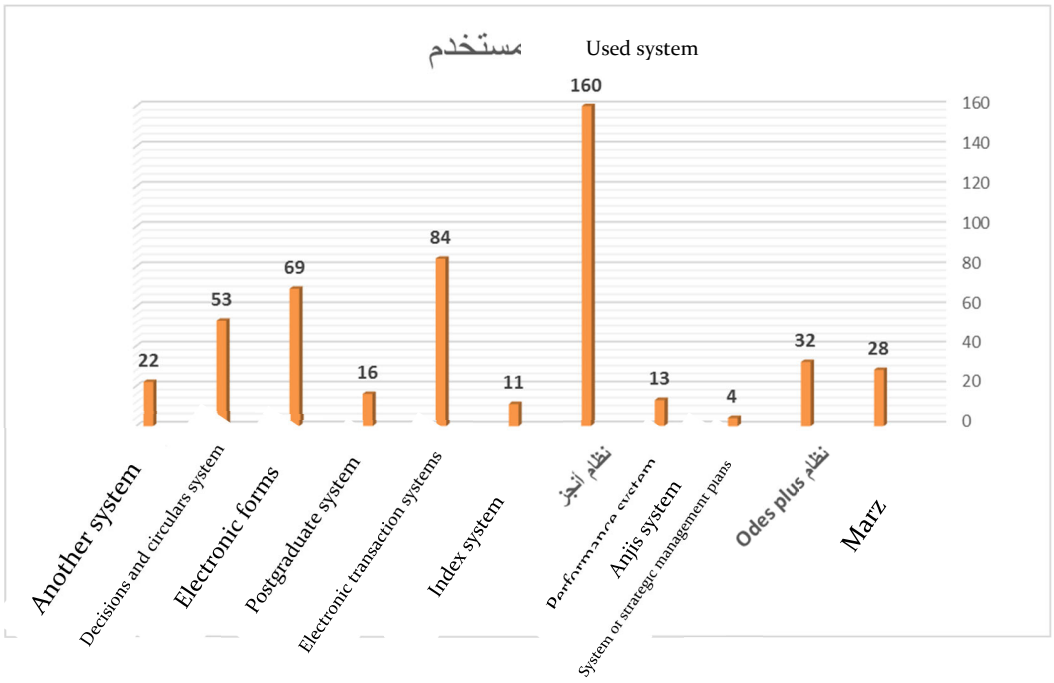


Table No. (3) Arithmetic averages of the questionnaire statements of the importance of information systems

Standard deviation	Arithmetic average	Phrase	Sort by questionnaire	Sort by answer
0.70	1.60	The system enables the user to early detect and evaluate gaps and deviations in operations and functions by providing accurate information on how they are performing.	7	1
0.73	1.59	The administration has computer systems that analyze and study the institution's data periodically to provide daily, monthly or yearly reports on the university's data for the benefit of administrators.	13	2
0.67	1.58	The information system helps employees' renewable innovations at work	16	3
0.72	1.58	The information systems applied at the university are used in training and developing employees	15	4

0.71	1.53	The administration uses a system aimed at increasing office productivity by collecting, distributing, processing and storing electronic messages, documents and other forms of communication between individuals and universities.	14	5
0.66	1.47	The system used converts the university's data into summary reports for the benefit of executive department managers	11	6
0.67	1.46	Computer systems are available that analyze and present the data to allow users to make decisions faster and easier.	12	7
0.59	1.37	The system enables the user to give the strategic tasks more time by reducing the time required to take care of the routine.	10	8
0.59	1.36	The exploitation of information sources and resources within the organization, and tight control over all incoming information.	2	9
0.59	1.32	Using the information system, the administrative levels are provided with reports of various forms in a timely manner.	8	10
0.53	1.29	The system helps the user to make the right decisions within the organization and to link all parties to the organization that supply and produce information with each other.	3	11
0.51	1.24	By using the information system, information sharing and exchange between administrative levels can be facilitated through networks within the organization.	5	12
0.45	1.23	The information system enables the administrative levels to store, save and enter information within the scope of processing and retrieval operations on time.	6	13
0.46	1.22	The system supplies information to management and prepares it on time to help and motivate it to make an effective and correct decision.	1	14

0.44	1.21	By using the information system, the information needed by the administrative levels can be sent and supplied when they need it, in order to exercise the functions of the administrative process.	4	15
0.38	1.13	By using the information system, it can save time and effort.	9	16
0.59	1.39	The average and the overall standard deviation		

The third question from the study questions:

What is the degree of application of information systems used for knowledge management processes at King Abdulaziz University? The following table represents the results of the averages of the respondents' expressions of the questionnaire according to the highest order of the averages. It is evident that statement No. (12) regarding the role of the process of knowledge sharing using information systems was, according to the arithmetic average, the highest result in the responses of the beneficiaries, followed by statement No. 11 in the questionnaire, the process of storing the accumulated knowledge in the media of information systems. As the phrase (8, 18, and 10) which follows the previous phrases in the highest order of averages indicates the knowledge process for documenting and coding knowledge and saving it in databases and benefiting from previous success stories in the university's information systems. The rest of the phrases in this axis represent a lesser degree in the application of information systems to knowledge processes, and this indicates through the responses of users of the systems to the role of knowledge processes in supporting the efficiency of the university's information systems.

Table No. (4) Arithmetic averages for the degree of application of information systems to knowledge management processes

Standard deviation	Arithmetic average	Statement	Sort by answer	Sort by questionnaire
0.83	2.05	The university allocates bonuses and other incentives to encourage employees to share knowledge, keep it in databases, and benefit from previous lessons and success stories in using information systems.	1	12
0.76	1.88	Magnetic disks are used to store accumulative knowledge	2	11

0.71	1.73	The university has similar case studies, work progress reports, and previous university-wide success stories	3	10
0.74	1.71	The university relies on its activities on interactive teams that enjoy independence and freedom of action	4	18
0.77	1.70	Individuals' experiences are recorded and kept in knowledge bases (knowledge coding and documentation)	5	8
0.73	1.70	A guide to standards and methods related to knowledge creation and construction using the information system is provided	6	9
0.65	1.62	Decision support systems are available that analyze databases and discover new knowledge	7	6
0.72	1.62	The university provides systems for archiving, classification, and artificial intelligence that elicit and integrate experiences and can create models and relationships in large amounts of data.	8	5
0.66	1.61	Cooperating with researchers and consultants to spread and apply knowledge at the university is done through the use of the information system	9	22
0.65	1.59	There are clear standards for controlling and evaluating knowledge	10	21
0.73	1.56	The university encourages financially and morally to use the available information systems	11	3
0.70	1.56	Using information systems, co-workers are generally able to share their knowledge and experiences on the job in pursuit of university service	12	13
0.70	1.55	Individuals accept to rely on existing information systems from sharing knowledge and do not monopolize it as their source of strength	13	15

0.65	1.55	The university supports knowledge sharing using information systems and motivates workers to spread their knowledge at the university	14	16
0.65	1.52	The university relies on information systems to raise regularly processed knowledge	15	19
0.66	1.52	The university supports the participation of members in scientific conferences and seminars using the available information systems	16	4
0.60	1.47	The university provides appropriate systems that support the cognitive values of the members	17	2
0.61	1.45	The work system is flexible and evolves based on how users obtain and use knowledge	18	17
0.62	1.43	The university is keen to provide systems to provide the best solutions for knowledge management in the university	19	23
0.57	1.40	The university's culture and systems support education and the sharing of information and ideas	20	14
0.62	1.39	Knowledge exchanged and available on the information system contributes to decision making	21	20
0.59	1.36	A system for storing information and knowledge is available at the university	22	7
0.51	1.31	Information systems work to access internal and external sources of information and knowledge	23	1
1.70	1.58	The average and the overall standard deviation		

The fourth question from the study questions:

What is the degree of challenges facing the application of knowledge management at the university? The following table shows the degree of challenges facing the application of knowledge management in the university through phrases No. (4 and 5) which state the lack of skills related to the use of knowledge technologies and the inability to measure the financial benefit achieved as a result of applying knowledge management, while statement No. (1) achieved no challenge in terms of the availability of resources and time to apply knowledge management.

Table No. (5): Arithmetic averages of the axis score, challenges facing the application of knowledge management

Standard deviation	Arithmetic average	Statement	Sort by answer	Sort by questionnaire
0.74	1.67	Employees have the time and capabilities to implement knowledge management	1	1
0.64	1.63	The inability to measure the financial benefit achieved as a result of applying knowledge management	2	4
0.71	1.62	Lack of skills associated with the use of knowledge techniques	3	5
0.71	1.59	The necessary awareness is provided for the benefit gained from applying knowledge management	4	3
0.69	1.48	University culture encourages sharing of knowledge	5	2
0.07	1.60	The arithmetic average and the overall standard deviation		

Discussion of the results of the study:

In this aspect of the study, the two researchers review the results of the study according to the axes of the questionnaire, the primary variables of the individuals of the study sample, then the importance of management information systems and their suitability in activating knowledge management - the role of information systems in knowledge management processes, and the challenges facing the application of knowledge management in King Abdulaziz University, as follows:

The results of the study proved:

1. The degree of use of information systems by administrators at King Abdulaziz University is 45 users and a standard deviation of 46). This result confirms the existence of a statistical indication that shows the importance and degree of use of electronic systems in the university by administrators.

2. The members of the study sample believe that the university is keen to provide information systems that help in evaluating administrative processes and functions and help in developing employees, which analyze the data and convert it into knowledge information for the benefit of the university's higher management.

3. The study sample members stress the importance of electronic information systems in the university, which in turn saves time and effort in extracting information, reports and statistics and providing them to senior management easily.

4. There is a statistical indication of the suitability of information systems in activating knowledge management processes (discovery, storage, distribution, sharing, or application).

5. The results of the average expressions of the respondents to the questionnaire represent according to the highest order of the averages related to the role of the knowledge sharing process using information systems. It was, according to the arithmetic average, the highest result in the responses of the

beneficiaries, followed by the process of storing the accumulated knowledge, coding the knowledge and saving it in databases and benefiting from previous success stories in the university information systems. This is evidenced by the answers of users of information systems in achieving the role of knowledge processes in supporting the efficiency of the university's information systems.

6. The university and the staff seek to convert tacit knowledge into declared knowledge using information systems and support the dissemination and sharing of knowledge, while this is a positive indicator pushing the direction towards knowledge management and supporting the shift from information management to knowledge one.

7. After performing the Chi-squared test for all the questionnaire statements at a significant level (0.05) with demographic variables, and using SPSS, it became clear that there is a significant relationship in the following statements: (Age, job position, number of courses) where a statistically significant relationship was found between those factors and the use of information systems.

Conclusion:

1. By reviewing the results of the affiliated users of information systems who are from the (youth group), this is a statistical indicator indicating that the university information systems are of effective use from the most effective and compatible with electronic systems, which believes that electronic transaction systems are better than the paper system, as it has the advantage of completing transactions in a short period and with the required accuracy and documents the procedures completely, as transactions can be archived and referred to at any time, while they also contribute to improving and speeding performance.

2. By calculating the averages for the respondents of the sample to the questionnaire and according to the higher order of the averages, the importance and role of information systems in the process of knowledge sharing was evident, according to the arithmetic average, the highest result in the responses of the beneficiaries, followed by the process of storing the accumulated knowledge in the information systems media and the knowledge process for documenting and coding knowledge and saving it in databases.

3. Among the difficulties facing the application of knowledge management at King Abdulaziz University, which stipulates the lack of skills associated with the use of knowledge techniques, although there is no challenge concerning the availability of resources and time to apply knowledge management, and this is due to the need to increase the training factor and increase the spread of knowledge culture.

4. One of the difficulties in applying knowledge management at KAU is the lack of skills associated with the use of technology despite the availability of resources and time.

5. By calculating the averages of the sample individuals, the importance of the role of information systems in knowledge sharing processes becomes clear, as they obtained the highest result, followed by the accumulative knowledge storage processes in the information systems media.

Study recommendations:

In light of the above, the study concluded with a number of recommendations and mechanisms to activate them in the real world, as follows:

First: The University emphasizes the importance of knowledge management, so that it becomes one of its most important priorities. To achieve this recommendation, the following mechanisms can be followed:

- Confirmation and adoption of management in a horizontal manner that follows an open door policy and enables the flow of knowledge.
- Promote appropriate ways to acquire knowledge by buying or renting them and providing financial support.
- Using functional symmetry to explain implicit concepts that managers and advisors have.
- Adding study materials related to knowledge management, methods of developing and benefiting therefrom.
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Second: Develop a strategic plan to implement knowledge management at the university and support its projects. To achieve this recommendation, the following mechanisms can be followed:

- Define expert rosters and knowledge maps.
- Clearly identifying the knowledge gap within the university.
- Allocating appropriate budgets to support the shift towards knowledge management.
- Forming a specialized work team to develop appropriate training and development programs.

Third: Spreading a culture of knowledge and instilling a knowledge vision among individuals. To achieve this recommendation, the following mechanisms can be followed:

- Holding seminars and conferences and facilitating the participation of other organizations in them.
- Encouraging individuals to experiment, learn, observe and encourage such activities.
- Managing informal meetings to reduce tension in formal relations between the university administration and individuals.
- Forming a volunteer work team of university professors to take care of all consultations related to knowledge management and activating its operations.
- Training the university employees on the use of information systems and technology.

References

[1] Alter, S. (2005), "The Work System Method", Available at: www.stevenalter.com

[2] Alter, S. (1999), "A general Yet Useful Theory of Information Systems", CAIS, 1 (13): pp. 1- 70.

[3] Abu Isha, Mubarak, Mansour, and Lilia (2012). Knowledge management as a modern management approach for organizations in the era of globalization. International Scientific Conference: Globalization of management in the era of knowledge. Tripoli: Jinan University, (PDF File).

[4] Noy, Taha Hussein (2011). Technological development and its role in activating knowledge management in a business organization: The case of the General Directorate of Algeria Telecommunications Corporation. Algeria: University of Algiers, p.: 89.

[5] Andrew H. Gold, Arvind Malhotra & Albert H. Segars (2001). Knowledge Management: An Organizational Capabilities Perspective. Journal of Management Information Systems Vol. 18, Iss. 1 Ke, W. and Wei, K. (2006). Organizational learning process: its .

[6] Antecedents and consequences in enterprise system implementation. Journal of Global Information Management 14 (1), 1-22. January-March 2006

[7] Kuo, Y .; Ye, K., (2010), "How Employees' Perception of Information Technology Application and their Knowledge Management Capacity Influence Organizational Performance ", Behavior & Information Issue 3 .-- 303 - June, P.P. 287 Technology, Vol. 29, No. 3, May Available at http://www.tandfonline.com/doi/full/10.1080/01449290701 852166?scrol l=top&needAccess=true

[8] Obaidat, Thuqan et el, Scientific Research: Its Concept, Tools and Methods, Dar Al-Fikr Publishing and Distribution, Jordan, 220-312 p.

[9] Basnawi, Hassan Darwish (2016) Methods for assessing knowledge management systems, a comparative study, published PhD thesis, King Abdulaziz University, Jeddah, available at http://search.mandumah.com/Record/767528

[10] Jobran, Ali, and Al-Mansouri Ahmed, Degree of Knowledge Management Application at Sultan Qaboos University in the Sultanate of Oman from the point of view of its faculty members, Hebron University Research Journal, Vol. (10), (2), 2015.

[11] Batwil, Abdullah Abdul-Rahman (2015): Share of administrative, financial and technical knowledge between the two works at King Abdulaziz University, an exploratory study, a Ph.D. thesis, King Abdulaziz University, Jeddah. Page: (Dr)

[12] Abbas, Muhammad Shukri, Ali, and Madiha Hamed (2013). Knowledge management systems and organizational commitment as criteria for preparing faculty staff at Taif University. Journal of the Faculty of Education, Al-Azhar University, Issue 153, Part 2.

[13] Al-Qurashi, Ati bin Attia (2012). The role of using information and communication technology in activating knowledge management in Saudi universities - a proposed scenario. Umm Al-Qura University, Faculty of Education.

[14] Abu Ali, Amer, Al-Dhibat, Mofleh (2012). The role of information systems in transferring knowledge. International Scientific Conference on the Globalization of Management in the Age of Knowledge. Jinan University. Tripoli.

[15] Sami Hanouneh, Raafat Muhammad Al-Awadi (2011). Applications of knowledge management in higher education institutions. Research presented to the E-Learning and Knowledge Economics conference held at Al-Quds Open University.

[16] Aisan, Salha Abdullah, Al-Ani, and Wajeha Thabet (2008). The role of information technology in knowledge management in the Faculty of Education at Sultan Qaboos University. Al-Basaer Journal, Volume 12, Issue 1.

[17] Al-Naqeeb, Metwally Mahmoud (2007). The degree of use of automated knowledge management systems in Education City in Qatar: An analytical descriptive study. A'lam Journal, Issue -1, October 2007.

[18] King Abdulaziz University electronic services website www.kau.edu.sa