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Towards Building of the Information Society Based on Its Components: A Case Study at the College of Administration and Economics/University of Mosul

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Abstract

The world and its various fields witnessing many changes resulting from economic, political, social and technological developments. Where the societies are racing to have as much as possible information because primary is the raw material in its success and facing to these developments. In addition to use of information technology with high intensity these communities as known as the information society. Educational institutions must be at the forefront of organizations that rely on information and information technology- for their activities.Hence, the intellectual dilemma of research which is the diagnosis of the availability of the ingredients for building an information society in the College of Administration and Economics to be considered among these communities' societies? The research focuses on achieving a fundamental goal which is to measure the availability of the components of the information society in order to be adopted in building of this society. The researchers adopted questionnaire as a tool to collect field data and then prepared for this purpose. As the form questionnaire included 34 questions. And the selected of a sample of (86) my teaching was chosen from the faculty members of the college of management and economics /the university of mosul, as for the case study method was used. The researchers reached a number amount to a number of conclusions, the most important of which is a weakness in the orientation towards the authoring and publish of scientific books by university professors. As for the most important proposals that were presented in the research are the importance of caring for providing the provision of information technology in all colleges of the University of Mosul because it is one a basic of the requirement in contemporary university education.

Keywords: Information Society, Information Content, Information Security, Information Technology, Information and Communication Technology Infrastructure.

Introduction

Societies throughout the ages have gone through various stages starting with starting with the age of agriculture by relying on agriculture in their lives for this community to be called an agricultural community, which was characterized by simplicity by relying on simple hand tools, and with the major industrial revolution in the eighteenth century, societies turned to an age of industry after the invention steam machines and mining methods have complicated areas of life are complicated and their requirements. Research has become agriculture that does not meet the needs and desires of societies. It has been called the industrial community. With the growth in the size and expansion of organizations, increasing complexity, and overlapping activities and processes, societies were required to use information-based technology in its core.

This approach heralds a new type of society in which information is at the heart of its work, and the primary material for accomplishing various tasks and activities, as well as the growing volume of information on which societies depend in their various sectors. This necessitated reliance on information technology to control information and ensure that it is used correctly, and to communicate it to its beneficiaries safely (Webster, 2014). And with the increase in the number of workers in the services sector jobs even in developing countries, Information is more intense in economic activities and these developments are partly due to structural changes that have occurred in the economy and society, in addition to technological progress, as unprecedented developments in information and communication technology changed societies in developed countries And developing alike in unimaginable ways not so long ago.

The way we manage our personal lives, the way we build and maintain relationships between people, and the way we engage in production and distribution activities have undergone changes that have long-term effects on society in general and on the economy in particular (Nath, 2017). The information society is distinguished by its components that organizations seek to achieve and adhere to in order to be considered within this society, and these ingredients contain many details that are mainly based on investment in information and communication technology. And since educational institutions are mainly based on information, it is a fertile environment in which to provide the ingredients the foundations of the information society.

The information society in the field of education focuses on developing new ideas and concepts for learners, this requires the individual in the educational process to adapt to the changing circumstances, to predict the future in a comprehensive manner, to have a critical view of his actions and to be sufficient enough to build new relationships (Aykaç, Gunaydin & Yilmaz, 2011) In this paper, we will try to test this at the University of Mosul, College of Administration and Economics.

Research Methodology

Research Problem

The research problem can be presented through the following research question:

- Are the building blocks of the information society available in the College of Administration and Economics?
- What is the extent to which the College of Business and Economics can be considered an information society?

Research Importance

The importance of the research stems from the importance of the topic, which can be referred to through the following:

- The growing interest in the information society by all groups of society, especially educational institutions.
- Entering information technology in the various fields of life that are the basis for building the information society. Especially the field of higher education that depends on information technology to deliver information and knowledge to the target class.
- The results of this research indicate the availability of the components of the information society in the college in question, according to which it is possible to build an information society in the college in question.

Research Objectives

- Providing a theoretical framework on the information society, by highlighting its concept and its building rectifiers.
- Trying to identify the availability of the rectifiers of the information society in the college in question.
- Submitting a set of proposals that could contribute to establishing the ingredients of the information society in the college under discussion.

Research Hypotheses

According to the research problem, the following research hypotheses can be presented:

- Most ingredients of the information society are available in the College of Administration and Economics.
- The College of Business and Economics can be considered a data society.

Field Data Collection and Analysis Tools

Initially, the researchers chose the College of Administration and Economics / University of Mosul as a sample for research from within a large community, which is the university, and the reason for this choice is that it is an educational institution that includes cadres dealing with information and knowledge mainly, in addition to that it must use information and communication technology to obtain information and from Then publish it and communicate it to the students.

In order to collect field data, the researchers relied on a questionnaire prepared for this purpose, after reviewing the opinions and writings of researchers in this field, as the form included (34) questions through which the availability of the elements of building an information society in the College of Administration and Economics was measured, to be based on the basis for considering this college a community of information or not. As for the number of distributed forms, it reached (86) forms, which were distributed to a sample of teachers in the college departments, and (79) forms were retrieved. Relying on the percentages and repetitions in analyzing and interpreting the answers and reaching the conclusions.

As for validity and reliability of the questionnaire, a set of tests were conducted that aimed to verify the validity and reliability of the questionnaire, and accordingly a group of gentlemen arbitrators specialized in the fields of ICT were presented to measure apparent validity. In order to make the questionnaire more appropriate, the internal consistency of the questionnaire questions was conducted, as 20 questionnaires were distributed as a preliminary test to a group of respondents. Furthermore, the stability of the questionnaire was tested using a set of statistical methods and tests, namely (validity and reliability) as shown in Table (1).

Table 1
Test the accuracy and quality of research items

Variable / dimension	Paragraph	Validity & Reliability		
		Factor Loading	Cronbach's Alpha	Composite Reliability
Information and Communications Technology	ICT1	0.776	0.81	0.86
	ICT2	0.764		
	ICT3	0.788		
	ICT4	0.754		
	ICT5	0.743		
	ICT6	0.777		
	ICT7	0.731		
	ICT8	0.841		
	ICT9	0.793		
	ICT10	0.814		
	ICT11	0.788		
	ICT12	0.774		
	ICT13	0.786		
	ICT14	0.763		
Information Content	ICO1	0.842	0.83	0.87
	ICO2	0.806		
	ICO3	0.793		
	ICO4	0.791		
	ICO5	0.721		
	ICO6	0.773		
	ICO7	0.873		
	ICO8	0.762		
	ICO9	0.727		
	ICO10	0.882		
	ICO11	0.791		
	ICO12	0.830		
	ICO13	0.762		
Security of Information Content	SIC1	0.779	0.86	0.88
	SIC2	0.841		
	SIC3	0.902		
	SIC4	0.801		
	SIC5	0.811		
	SIC6	0.789		
	SIC7	0.816		

Theoretical Framework

The Concept of the Information Society

The first person to name the information society was Professor Yoneji Masuda in 1972 in his book the information society and that this society is a continuation of the era of hunting and agriculture, and industrial societies (Parikka & Ojala, 2008), and multiple labels for the information society have been launched by many writers And researchers such as Drucker, Bell,

Toffler, such as the post-industrial society, the wireless community, the digital community, the electronic community, the non-digital society, the knowledge society, the third wave society, the communication community, and regardless of the designations, but there are no fundamental differences in the views of researchers, As they agree on the idea that Mjt With information is a new form of organization of social, economic and technological life. The concept of the information society can be a good organizational principle to describe and analyze the changes that occurred during the past fifty years and the future in the twenty-first century (Nath, 2017).

The information society is a new environment based on clarity, accuracy, honesty and openness, and only those who are incompetent and who cannot adapt to the new environment cannot remain in it. And that information is the primary material of the information society, and unlike the basic materials in other societies where it is depleted due to consumption, while in the information society, information generates information, meaning that it is renewable and not exhausted. This society promotes equal opportunities in obtaining information, and therefore the free flow of information and its availability for all without any restrictions will provide equal opportunities for all members of the information society to obtain and use information in an ideal way (Isazadeh, 2014).

The studies (Rukanic & Anameric, 2004) indicates that the details of the information society are evident through some of its features: the existence of an information network, information banks and communication networks in order to reach the knowledge that everyone needs, and the replacement of muscular and mechanical strength to intellectual and mental capabilities, in addition to focusing on Continuing education in this society. So, if the information society is viewed from a technological point of view, the emergence of a group of new technological innovations since the late sixties has had a major role in the orientation towards this society. These innovations include all kinds of computer hardware and wired and wireless communication networks. That is, the information society is "the society in which everyone has at least one computing device, in addition to having sufficient knowledge of using information and communication technology, as well as accomplishing most activities and jobs using this technology and this is what distinguishes this society from traditional societies" (Webster, 2014). Also, Martin Bangemann defines the information society as "an information-based revolution, which is a form of knowledge and technological development, and enables the processing, storage, circulation and retrieval of information, and in various forms that may be editorial, oral, or visual, regardless of distance, time, and size." (Becla, 2012,126). It can be said that the information society is "a society in which economic, social and political activities depend on information through obtaining, distributing and using it. Digital information and communication technology are considered the main engine in this society, and individuals who have the means to participate in this type of society are called digital individuals sometimes (Hilbert, 2015). Whereas, the proceedings of the World Summit on the Information Society (WSIS) held in two phases in 2003 in Tunisia and 2005 in Geneva focused on the concept of information technology sustainability and sustainability relates to the question of how current and future generations can lead a good life in society through the continued development of information technology that Shows all areas of life (Fuchs, 2017). This community has been described as a society in which every individual can create, use and share information and knowledge so that it develops the capabilities of individuals and directs their capabilities towards sustainable development, and this can only be done through advanced information technology that facilitates the process of exchanging real-time information between all parties

(Muhammad, 2006).

The Characteristics of the Information Society

Some experts believe that there is a new system whose features are beginning to appear, and there are many different views and approaches in the literature about the main features of the information society, and these features have taken different directions that can be explained through the following:

- The expansion of the use of information and communication technology, as all segments of society, use this technology to automate the accomplishment of various activities and tasks, and the parties communicate with each other through local and regional communication networks and access to the Internet.
- The increasing need for information technology has resulted in the development of the infrastructure of this technology, the increase in the speed of data processing, and Amount storage capacity amounts of information and retrieve it in the required time.
- Reliance on information mainly primarily by the community, so that information has become a commodity for shopping, and an essential resource in economic, social and political development, research that the industrial community has turned into an information society (ylimaz, 2010).
- The information society encourages equal opportunities, through the free flow of information, the availability of information for all without any restrictions, control or filtering, and providing equal opportunity for all citizens of the information society, and this translates into an equal distribution of power in this society (Isazadeh, 2014, 2).
- Changing the concept of education in the information society, as the goal of education here is to teach the learner, and to adapt it to the requirements of the times because the typical feature of the information society is the rapid change so that individuals are required to produce new information when needed with their current information, and this is how to catch up with the age (Aykaç, Günaydın & Yılmaz, 2011, 3).
- The orientation towards artificial intelligence through its different types, such as neural networks, reports, smart proxy, expert systems, and others. They are connected to electronic computers to replace humans often (Cummings, 2017, 6).

The Building Blocks of the Information Society

The information society is based on a set of ingredients or bases, and the basis of these ingredients is about information and communication technology because it is the reason for the emergence of this society based on information and knowledge. The main ingredients can be discussed through the following:

The First: Information and Communication Technology and its infrastructure

Information and communication technology are the electronic means and methods used to store, process, retrieve and publish information instead of traditional means. It can be considered as the capital of the organization and is no longer a human-controlled means to achieve specific goals. Rather, it is used to change the world in a deliberate and purposeful way for the better. And as (Illich's) points out, both society and technology must be redesigned in an integrated way, so that information technology integrates with the needs and requirements of a new society based primarily on this technology in accomplishing most activities and

functions (Fuchs, 2017, 2434).

The dependence of the information society on information and communication technology requires the availability of advanced infrastructure for this technology, enabling organizations working in this society to meet the digital needs of customers through the provision of electronic services, and to stand up the face to the competitive challenges by reducing the costs of dense technology because this structure is a strategic resource from difficulty imitating it by competitors. The flexibility of the infrastructure is used in a wide and varied field, such as the ability to provide information to users with high accuracy, reliability, safety, and confidentiality. In addition to the ability to provide comprehensive communications and access to sites through its scope and reach. As well as the ability to adapt to the trends and needs of business operations (Mithas, Ramasubbu, Krishnan & Sambamurthy, 2004). Some studies indicate that the total of what is invested in the information and communication technology infrastructure in the organizations equals 58% of the total budgets allocated to investing in the information technology in the organization (Zhing, 2005). The information and communication technology infrastructure are an integrated set of reliable technology services that are available to support existing applications and new initiatives in the organization (Mithas, et.al, 2004). It can also be described as "the foundation on which information technology capabilities are based to deliver reliable services, and is shared through the organization and in central coordination through its information systems team" (Broadbent & Weill, 2000).

So, from the foregoing, the infrastructure is the basis in information and communication technology that includes all the basic hardware and equipment for the operation of the information system, as well as all kinds of software that covers the community's need, internal and external communication networks, which are the nerve in the information society and play a fundamental role in the absence of time and space from During the holding of alliances and cooperation in an asynchronous manner, as well as the buildings for information centers and according to specifications that ensure the efficiency of the work of information technology on the one hand, and its security and safety from various risks on the other hand.

The Second: Informational content

It can be said that the information and communication technology infrastructure and informational content are the dual on which the information society is based, and the communication network can resemble blood vessels, but the information is the blood that flows in these networks. The spread of information in the life of societies and its increasing role in various fields and activities have changed the economic structures of countries and the so-called knowledge economy or information economy has emerged.

The information content is related to the intellectual production of information, ideas, experiences and knowledge that can be stored in various traditional and advanced media with technological advances such as electronic databases, and publishing them on paper or electronically. According to the UNESCO report, informational content has been defined from the educational point of view as a way to achieve the four goals of education in the information age: learn to know, learn to work, and learn to be, learn to share with others (Muhammad, 2006). Content in the information society is based on advanced information technology and communication networks using audio, visual, multi-dimensional and mobile features and characteristics (Hind, 2008, 50). The information content can be viewed as information that may be in the form of texts, numbers or forms that are saved in different ways, and the value of

this content may be high for the beneficiaries of it, especially in light of the contemporary digital economy, and therefore the measurement of information content is useful for decision-makers when evaluating investment projects Because information can help understand the core values of organizations. (Chang, Teng, Bozanic & Ke, 2016).

The content of the information consists of two main interrelated elements, the raw content and includes all the elements that represent a raw resource entering into the content industry, and includes the content published in books, documents, paper, and electronic databases, and the media content that is preserved in the form of audio, film and other materials, and finally the content of peoples heritage and their cultural repository. The other component of informational content is the content produced and includes all outputs of the content industry and includes paper publishing from newspapers and magazines. Electronic publishing including websites and electronic expanders. In addition to media and artistic production, such as media programs. As well as scientific and technological publishing, such as scientific journals, patents, and finally software such as application software, production software, and video games (Muhammad, 2006, 6-7).

In that context, the content of the information in the university represented by the lectures must be concentrated in the scientific curricula that relate to the scientific subject, so that it ensures maximum benefit from it, and the delivery of knowledge to its students who are students at the university. This content will be books, reports and scientific research that may be in electronic or paper form.

The third: Information security

The information society primarily requires dependence on information, there for the amount of information is large, and this increases the percentage of risks to which information and security can be exposed, and despite the development of information and communication technology, except that hacking methods of the threat of information security have also evolved. Information security is defined as "protecting the confidentiality and integrity of information in processing, storing and dispatching, in addition to protecting communications means that transmit information content" (Mattord & Withman, 2005,8). The study of information content security includes many concepts and topics that all IT professionals must master or have some basic, and there is a need to develop an information security policy for the organization, in addition to specifying the responsibility for information security in it. This ensures the integrity and integrity of the information by preventing unauthorized access and tampering with it. In addition to maintaining the confidentiality of information and not leaking it illegally in the right place, trusted individuals in the right place (Alhassan & Adjei-Quaye, 2017).

Results and Discussion

This paragraph includes a review of the data collected from the field of research represented by the College of Administration and Economics at the University of Mosul, and then reaching the results through which hypotheses can be tested and validated. In addition, the axis discussed the conclusions reached through the results and then presented a set of proposals that can be taken.

First: Data Analysis and Hypothesis Testing

This paragraph includes a review of the collected and analyzed field data related to the

building blocks of the data society, the aim of which is to test the research hypotheses and is to verify the availability of the ingredients for building the information society, in addition to achieving the goals that researchers seek to reach from this research. The results can be identified in the following paragraphs:

Information and Communication Technology

Information and communications technology can be considered the cornerstone of the information society, where the emergence and development of this society is based mainly on information and communication technology, therefore the availability of this requirement in the community is an essential indicator of the society's consideration of it as an information society, and it is clear from the Table (1) that the percentage of availability This requirement in the college in the field of research reached (71.15%), which is a high percentage compared to the percentage of its unavailability of 23.34%. The total mean value for this requirement is (1.70) and a standard deviation of (0.39).

The researchers note that the indicators that contributed to the high percentage of the availability of this requirement are mostly personal, that is, the information and communications technology for the teaching sample, as an indicator (ICT1) and (ICT8) and (ICT9), where the availability rate was high compared to the availability of information and communications technology in The college the a field of research, as shown in Table (2).

Table 2

Percentages, iterations, mean, and standard deviations for information and communications technology

Paragraphs	Agree (2)		Disagree (1)		Mean	St.D
	%	Number	**%**	Number		
ICT1	94.9	75	5.1	4	1.94	22%
ICT2	57.0	45	43.0	34	1.56	49%
ICT3	70.9	56	19.1	23	1.70	45%
ICT4	45.6	36	54.4	43	1.45	50%
ICT5	55.7	44	44.3	35	1.55	49%
ICT6	74.7	59	25.3	20	1.74	43%
ICT7	81.0	64	19.0	15	1.81	39%
ICT8	97.5	77	2.5	2	1.97	15%
ICT9	91.1	72	8.9	7	1.91	28%
ICT10	58.2	46	41.8	33	1.58	49%
ICT11	88.6	70	11.4	9	1.88	31%
ICT12	86.1	68	13.9	11	1.86	34%
ICT13	62.0	49	38.0	30	1.62	48%
ICT14	32.9	26	67.1	53	1.32	47%
Total index	71.15		28.84		1.70	39%

Table prepared by the researchers based on data analysis

Information Content

Society cannot be considered an information society unless deal with information, and therefore it is considered the essence of these societies and its primary material, from here, this content should be distinguished by fundamental characteristics that distinguish the society that it owns and uses in various activities and functions. From Table (3), it is clear from the answers

of the research sample that the percentage of availability of information content indicators reached (62.11%), While the percentage of the non-availability of this ingredient or requirement was (37.88), these ratios came with mean of (1.61) and a standard deviation of (0.44). It is clear from the answers that the answers that led to the increase in the availability of content indicators. The information is mostly related to the teaching and not to the college, for example, such as the indicator (ICO1) (ICO2) (ICO3) (ICO7) (ICO8), while the indicators that require support from the college or university were Low compared to others, for example, electronic participation requires the availability of some techniques that are not available or always available for teaching. as shown in Table (3).

Table 3

Percentages, iterations, mean, and standard deviations of informational content

Paragraphs	Agree (2)		Disagree (1)		Mean	St.D
	%	Number	**%**	Number		
ICO1	79.70	63	20.3	16	1.79	40%
ICO2	73.4	58	26.6	21	1.73	44%
ICO3	67.1	53	32.9	26	1.67	47%
ICO4	45.6	36	54.4	43	1.45	50%
ICO5	58.2	46	41.8	33	1.58	49%
ICO6	16.5	13	83.5	66	1.16	37%
ICO7	79.7	63	20.3	16	1.79	40%
ICO8	82.3	65	17.7	14	1.82	38%
ICO9	83.5	66	16.5	13	1.83	37%
ICO10	36.7	29	63.3	50	1.36	48%
ICO11	57.0	45	43.0	34	1.56	49%
ICO12	54.4	43	45.6	36	1.54	50%
ICO13	73.4	58	26.6	21	1.73	44%
Total index	62.11		37.88		1.61	44%

Table prepared by the researchers based on data analysis

Security of Information Content

Given the importance of the content and the special value of it in the information society, the guarantee of security and safety of this information is extremely important, therefore it is one of the pillars, ingredients, or basic requirements for building and establishing the information society. By observing the results of the analysis, it is clear that the percentage of the availability of this ingredient reached (62.72%), while the percentage of its unavailability reached (37.27%). These ratios were supported by the value of the mean (1.62) and the standard deviation of (0.46). What supports the percentage of availability of this ingredient or requirement is the indicator (SIC1) (SIC5), where its availability was high in the total researched through sample responses. Table (4) shows these results.

Table 4

Percentages, iterations, mean, and standard deviations for the security of information content

Paragraphs	Agree (2)		Disagree (1)		Mean	St.D
	%	Number	%	Number		
SIC1	79.7	63	20.3	16	1.79	40%
SIC2	54.4	43	45.6	36	1.54	50%
SIC3	43.0	34	57.0	45	1.43	49%
SIC4	51.9	41	48.1	38	1.51	50%
SIC5	79.7	63	20.3	16	1.79	40%
SIC6	62.0	49	38.0	30	1.62	48%
SIC7	68.4	54	31.6	25	1.68	46%
Total index	62.72		37.27		1.62	46%

Table prepared by the researchers based on data analysis

Consequently, this study is consistent with previous studies such as (Ermakova, & Sukhovskaya, 2020; Molina et al., 2020; Ziemba, 2019; Martin, 2017; Black & Muddiman, 2016).

Conclusion

This study aims to identify the availability of the components of the information society in the subject field, and the results of the study showed the availability of these elements in the field being examined and therefore this information can be used to achieve many benefits to the college, especially in light of the increasing need for use information has increased significantly and societies have become dependent on it. In the same direction, we conclude from the results of field data analysis that the requirement (ingredient) of information and communication technology is available in the departments of the College of Administration and Economics in varying proportions, and in general the high percentage of availability of this requirement is due to the personal capabilities of the teaching staff in their ownership and use of information technology. Consequently, this is evidence that the faculty members of the research sample are very interested in publishing and sharing information in their field of specialization, in addition to participating in scientific platforms, which is one of the indicators of the requirement of information content. According to the findings it is recommended that:

1. Providing advanced communication networks that link the departments with each other within the college and colleges in the university.
2. Encouraging the teaching staff to use information technology to communicate with researchers in other Iraqi universities and outside Iraq, and to participate in conferences in order to develop their information content.
3. The importance of maintaining the security and safety of information centers (laboratories), and some important information in colleges during their transportation or electronic storage, such as grades and documents for students.

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