The Impact of Culture on Technology Alignment within e-Government in Jordan

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Abstract— This research focus on the culture factor that may effect the use of technology in e-government when applying e-government in Jordan and how to manage the change in such situations in a practical way to a deeper understanding of the impact of culture when applying e-government in Jordan and if new IT technologies can be integrated successfully into government departments and institution, taking into account the achievement of successfully technology alignment within government agencies,The results of this paper show that there is a positive direct relationship between user readiness and culture, also a positive direct relationship between technology alignment and e-government.

Keywords— E-government, Culture, Change Management, Technology Alignment, Reliability, validity.

I. INTRODUCTION

E-government is not just about technology but a change in culture, nevertheless new IT technologies can be integrated successfully into government departments and institutions ,Based on his majesty vision which implies that The Vision for investment in the information technology sector out of providing the necessary infrastructure has represented national competencies young scientifically qualified and not only in Jordan, but throughout the Arab region, where we trained technically and deployed have adopted a set of Initiatives within the sector was mainly disseminating information technology centers throughout the Kingdom, in addition to launching e-government initiative and the initiative to the development of education in Jordan and e-education, which was launched at the World Economic Forum (King Abdullah II,1999).

II. A RATIONALE FOR THE RESEARCH

Trying to find what is the impact of culture when applying e-government in Jordan and if new IT technologies can be integrated successfully into government departments and institution, taking into account the achievement of successfully technology alignment within government agencies·

III. STATEMENT OF THE RESEARCH OBJECTIVES

The goal of this study is to find the relationship between user readiness and the Jordanian culture and to find the relationship between technology alignment and the success of e-government implementation

IV. HYPOTHESIS:

H1: there is a positive direct relationship between user readiness and the Jordanian culture.

H2: there is a positive direct relationship between technology alignment and the success of e-government implementation.

V. DEFINITION OF TERMS

Culture: several definitions of culture based on the research of [19] are presented here, discusses how culture has been framed in various studies as ideologies, coherent sets of beliefs, basic assumptions, shared sets of core values, important understandings, and the collective will. Others suggest that culture includes more explicit, observable cultural artifacts such as norms and practices [13], symbols as well as language, ideology, rituals, myths, and ceremony. Reference [18] make this distinction between tacit and explicit components of culture, describing the tacit aspect (e.g., assumptions) as *ideational* while the more explicit artifacts of culture (e.g., norms and practices) are refened to as *material.*

E-government: Reference[15] found that new application of information and communications technologies (ICTs) are an important catalyst in the modernization of government. E-government has been driven in most countries by the imperatives of e-Commerce and the challenge of attaining competitiveness in the new economy. The aim has been to draw on the experience of private business in order to meet the rising expectations of citizens, to make the institutions of government operate in ways that reflect the rhythm and structure of people's lives, rather than the routines and organizational models of the past. Department and agencies have been told to cooperate and coordinate with each other, to share information and to experiment with new systems for learning and innovation.

Change Management: managing change effectively is difficult enough with its attendant uncertainties and the problems along the way. It requires an understanding both of what is and seems likely to happen and of how people react to change, and a skilful management performance. Change management is rather like conducting an orchestra. In a changing world the only constant is change, managers face complex and challenging pressures and opportunities. They must ensure the efficient use of resources and, at the same time, find ways of guaranteeing the long-term effectiveness of the organizations for which they work. [5].

VI. LITERATURE REVIEW

E-government is not just about technology but a change in culture, nevertheless new IT technologies can be integrated successfully into government departments and institution, taking into account the achievement of successfully technology alignment within government agencies.

The research team of this study trying to find the impact of culture when applying e-government in Jordan and how to manage the change in such situations. And to achieve the objectives of the study which consist of two dimensions, First, to find the relationship between user readiness and the Jordanian culture, Second, to find the relationship between technology alignment and the success of e-government implementation.

Based on government vision which implies that the vision for investment in the information technology sector out of providing the necessary infrastructure has represented national competencies young scientifically qualified and not only in Jordan, but throughout the Arab region, where we trained technically and deployed have adopted a set of Initiatives within the sector was mainly disseminating information technology centers throughout the Kingdom, in addition to launching e-government initiative and the initiative to the development of education in Jordan and e-education, which was launched at the World Economic Forum (King Abdullah II,1999). His majesty vision guide the research team for trying to find what is the impact of culture when applying e-government in Jordan and if new IT technologies can be integrated successfully into government departments and institution.

Once a culture is fixed to accommodate the change, the next step is to align new technologies with current and future business goals to achieve exactly what the government need from applying new technologies.

VII. WHY CULTURE...

This research focus on the culture factor that may effect the use of technology in e-government. There is a need to consider the effects of culture on implementation and use of technology [14], [6] found that Classic works on cross-cultural behavior (e.g. [12], [13].

There is a variety definition of culture, Culture is not defined merely by ethnicity and geographic locale [7], [18] stated in their research how culture has been framed in various studies as ideologies, coherent sets of beliefs, basic assumptions, shared sets of core values, important understandings, and the collective will[18] stated in their research what Others suggested about that culture includes more explicit, observable cultural artifacts such as norms and practices [13]), symbols as well as language, ideology, rituals, myths, and ceremony [24], [18] make this distinction between tacit and explicit components of culture, describing the tacit aspect (e.g., assumptions) as *ideational* while the more explicit artifacts of culture (e.g., norms and practices) are refined to as *material.*

Practices are the visible part of cultures, while values represent the invisible part [13] Culture has become a fad, among managers, among consultants, and among academics, with somewhat different concerns. Fads pass, and this one is no exception. Nevertheless, we believe it has left its traces on organization theory [12]. The implementation of information systems is increasingly resulting in significant changes to the host organization's [8].

Reference [11] stated in his book what Cohen Raymond an Israeli international relations specialist once described culture by a computer analogy "The human cultural software is made up of ideas, meanings, conventions and assumptions. It moulds our perceptions, so that where the city dweller sees only sand, the nomad picks up a host of clues about the nature of the terrain, the presence of wildlife, the weather, the availability of pasture and the presence of other tribes. It structures our idea, so that one sees work as the fulfillment of human destiny, while another sees it as a curse".

The concept of organizational, or corporate, culture has gradually escaped from the fad status it acquired in the 1980s, and has become a basic concern in the study of organization and management, at the same level as strategy, structure and control [13]. Both work goals and general beliefs deal with values, but work goals represent "values as the desired" (what people claim to want for themselves) while general beliefs represent "values as the desirable" (what people include in their world view) [12].

Reference [19] stated in their research the most popular conceptualization of national culture of [12],[13] original taxonomy describing culture along the dimensions of power distance, uncertainty avoidance, individualism-collectivism, and masculinity-femininity. Reference [14] noted that hofstede focused on values as a determinant of behavior in an extensive study of difference among national cultures.

Hofstede's cultural values to describe the relationship between national culture and IT use and adoption. Uncertainty avoidance was the most used dimension (nine studies) followed by power distance (seven), individualism-collectivism (four), and masculinity-femininity (three) [19]. Detail about hofstede cultural dimensions are in the next table.

Table 01. Hofstede's Dimensions of Culture

Cultural Dimensions	Description
Power Distance (PD, PDI)	The extent to which members of a society expect and accept inequalities in power distribution. Higher score signifies greater inequality.
Individualism vs. Collectivism (IDV)	The measure of a society's emphasis on individual rights, freedoms, and achievements vs. the greater good of the society as a collective. Higher score signifies greater tendency towards individualism.
Masculinity vs. Femininity (MAS)	The degree to which a society emphasizes the distinction between traditional gender roles. Higher scores mean greater distinction, Lower scores signify blurring of traditional roles.
Uncertainty Avoidance (UA,UAI)	The extent to which members of a society tolerate uncertainty and ambiguity. Higher scores signify lower tolerance.
Long vs. Short-term Orientation (LTO)	A.k.a. Confucian Dynamism, LTO benchmarks a society's attitude towards time, patience, and emphasis on tradition vs. demand for immediate results. Higher scores mean a greater degree of patience.

Source: Cook and Finlayson, 2005. The Impact of Cultural Diversity on Web Site Design.

VIII. CHANGE MANAGEMENT AND TECHNOLOGY ALIGNMENT

The research team of this study trying to find the impact of culture when applying e-government in Jordan and how to manage the change in such situations. [22] stressed that IT is all about managing change. Since managing change effectively is difficult enough with its attendant uncertainties and the problems along the way, it requires an understanding both of what is and seems likely to happen and of how people react to change, and a skilful management performance

[5]. New systems require changing how work is done, this means that focusing only on the technical aspects is only half the job, but the other job is change management, change management is the process of assisting people to make major changes in their working environment [22]. Others views change management like conducting an orchestra, and emphasize that in a changing world the only constant is change [5].

Many systems turned into implementation fauilres because the people side of the system was not handled [21]. Managers face complex and challenging pressures and opportunities, they must ensure the efficient use of resources and, at the same time, find ways of guaranteeing the long-term effectiveness of the organizations for which they work [5]. People resist change, especially technological change, when they view it as a crisis [21]. If organizations are to contemplate the next decade of technological change with any equanimity, they must design flexible IS arrangements with change in mind [10].

Managers must plans for achieving greater business–IT strategic alignment, and for translating alignment into enhanced IT effects on business performance [16]. Alignment grows in importance as companies strive to link business and technology in light of dynamic business strategies and continuously evolving technologies [20], [9], [27] both emphasizes that alignment of technologies with business needs considered as a dominant objective and that the establishment of strong alignment between information technology (IT) and organizational objectives has consistently been reported as one of the key concerns of information systems managers.

In recent decades, billions of dollars have been invested in information technology (IT), A key concern of business executives is alignment applying IT in an appropriate and timely way and in harmony with business strategies, goals, and needs. This issue addresses both how IT is aligned with the business and how the business should be aligned with IT [20], [11] stated that Instead of focusing on IS as core or noncore, the debate should really center on which IS capabilities are core to the business's future capacity to exploit IT successfully. The establishment of strategic alignment between information technology (IT) and organizational objectives has consistently been reported as one of the key concerns of information systems managers [25] Senior executives continue to be concerned about factors influencing the business effect of information technology IT [16]. New developments in computing and information technology enabled the retention and transfer of information in organizations on a larger scale than was once possible [3], which is helpful to make e-government implementation much easier and successful by providing users with what they need. E-government considered as one of the applications which faces problems associated with the technological change.

IX. E-GOVERNMENT

Electronic government is a generic term for Web-based services from agencies of local, state and federal governments; Such Web sites provide a wide variety of services to the public and have been extremely helpful in reducing internal paperwork. For example, the myriad of forms that government agencies require can typically be downloaded from a Web site, when information on the site is clearly indexed and explained, the number of support calls is dramatically reduced compared to the days before the Web as defined in (Computer Desktop Encyclopedia, 2007). E-government can be defined as a process of conducting business between the public and the government through the use of automated systems and the Internet network [1].

The diffusion of information and communication technologies (ICTs) in the public sector particularly through the Internet and the World Wide Web is now commonplace [4], [15] found that new application of information and communications technologies (ICTs) are an important catalyst in the modernization of government, also he stressed that e-government has been driven in most countries by the imperatives of e-Commerce and the challenge of attaining competitiveness in the new economy, he ensures that the aim has been to draw on the experience of private business in order to meet the rising expectations of citizens, to make the institutions of government operate in ways that reflect the rhythm and structure of people's lives, rather than the routines and organizational models of the past, Department and agencies have been told to cooperate and coordinate with each other, to share information and to experiment with new systems for learning and innovation.

Reference [4] stated that the widespread usage of the Web and the Internet as information and communication technologies (ICTs) is a recent important public sector innovation, Reference [23] implies it is argued here that Electronic Government (E-Gov) research to date has misconceived humans and technology, tending to give primacy to one or the other, but failing to grapple with their interaction. In general, various descriptive models present a linear progression of stages typically, going from routine online tasks that previously required people to visit agencies and then on to higher level connections, including creation of edemocracy [4], [25] stated that there is lack of understanding of the interactions between humans and technology. Users cannot be treated as a homogeneous group and therefore readiness depends on accessibility, culture and economic status of diverse groups [2].

According to the "Implementation of E-Government in Jordan" report released by the E-Government task force in Jordan, E-Government is defined as not a technology project, but rather as an attempt to accomplish the following:

- Improve the performance, credibility and transparency of the government.
- Provide government products and service electronically.
- Provide services to citizens electronically.
- Improve collaboration between government agencies.
- Improve Jordan's competitive advantage.
- Reduce costs incurred by the government and the private sector

Government agencies traditionally have operated as separate islands. Each agency developed a computerized system on its own. With the establishment of E-Government and the renamed Ministry of Information and Communications and Technology, the various agencies will interact in a meaningful way.

X. METHODOLOGY

Research Design

This research is Quantitative research [21] indicated that the Quantitative research involves studies that make use of statistical analyses to obtain their findings. Key features include formal and systematic measurement and the use of statistics. Therefore, the research team decided to follow the quantitative survey research because it's the most popular quantitative research design, implies that survey research design are quite flexible and can therefore appear in a variety of forms, but all are characterized by the collection of data using standard questionnaire forms.

The questionnaire covers the four variables in this research (user readiness, culture, technology alignment, e-government).

The questionnaire of this research was developed based on a comprehensive literature review, with items being adapted from previously tested instruments where available. The questionnaire was first consulted by Dr. Firas Alkhaldi the Scientific Research Dean at Arab Academy for Banking and Financial Sciences.

The final questionnaire was developed and the demographic information is added; the gender, the age, marital status, educational level. Each items featured a five-point Likert scale, with response options ranging from "strongly disagree" to" strongly agree". Then 112 questionnaires were sent to 4 government institutions and ministries that provide e-government services, the total of 95 questionnaires were returned. The SPSS™ (version 11) was used for the statistical analysis of the survey data.

Participants

The participants in this research are represented by the end user's who interact with e-government system, including employees who deals with e-government system. This means that the population of the research is fairly very large, as Reference [21] illustrated in there book that the population is all individuals of interest to the researcher, and Because researchers may not be able to study the entire population of interest, it is important that the sample be representative of the population from which it was selected. indicated that a sample is asset of subjects selected from a population. Reference [17] also assured that sample design may as well lay down the number of items to be included in the sample; therefore the research team will select a sample from the population of the study using the probability sampling. Which also known as 'random sampling' or 'chance sampling' [17],[23] indicated that a random sample is one that is drawn in such a way that every member of the population has an equal chance and independent chance of being included.

The respondents in this survey were employees from all levels of directorate of computer and e-government sections from; the Housing and Urban Development Corporation (HUDC), Greater Amman Municipality, Ministry of Industry and Trade, Ministry of Information and Communication Technology).

Data Collection.

▪ Primary source:

The primary source for data collection in this study will be through Questionnaires. This method of data collection is quite popular, particularly in case of big enquiries [17].

▪ Secondary source:

The secondary source for data collection in this study will be through technical and trade journals, books, reports and publications of various associations connected with business and industry, and other sources of published information. Secondary data means data that are already available, they refer to the data which have already been collected and analyzed by someone else [17].

Operational Definitions:

Culture: Ideologies, coherent sets of beliefs, basic assumptions, shared sets of core values, important understandings, and the collective will [18] Practices are the visible part of cultures, while values represent the invisible part [12] Both work goals and general beliefs deal with values, but work goals represent "values as the desired" (what people claim to want for themselves) while general

beliefs represent "values as the desirable" (what people include in their world view) [12].

E-government: Reference [15] found that new application of information and communications technologies (ICTs) are an important catalyst in the modernization of government. E-government has been driven in most countries by the imperatives of e-Commerce and the challenge of attaining competitiveness in the new economy. The aim has been to draw on the experience of private business in order to meet the rising expectations of citizens, to make the institutions of government operate in ways that reflect the rhythm and structure of people's lives, rather than the routines and organizational models of the past. Department and agencies have been told to cooperate and coordinate with each other, to share information and to experiment with new systems for learning and innovation.

Technology Alignment: Alignment applying IT in an appropriate and timely way and in harmony with business strategies, goals, and needs [20].

Change Management: managing change effectively is difficult enough with its attendant uncertainties and the problems along the way. It requires an understanding both of what is and seems likely to happen and of how people react to change, and a skilful management performance. Change management is rather like conducting an orchestra. In a changing world the only constant is change, managers face complex and challenging pressures and opportunities. They must ensure the efficient use of resources and, at the same time, find ways of guaranteeing the long-term effectiveness of the organizations for which they work. [5].

Reliability and Validity of instruments

Reliability is present when an assessment method measures the characteristics of interest in a consistent fashion [21]. The research team uses items being adapted from previously tested instruments, which is reliable.

Validity is present when the approach to measurement used in the study actually measures what it is supposed to measure the conceptual question that validity seeks to answer is the following: "Does the instrument or measurement approach measure what it is supposed to measure?" If so, then the instrument or measurement approach is said to be valid because it accurately assesses and represents the construct of interest [22]. The research team will use items being adapted from previously tested instruments, which is valid. Also they will use the Content validity which refers to whether an instrument provides adequate coverage of a topic .

Proposed Analysis of the Data

In order to the fact that the research team decided to follow the quantitative survey research, they will use Statistical Package for Social Sciences (SPSS). SPSS is Software used for statistical analysis, SPSS is the name of the company that developed the program and it is one of the most popular programs for statistical analysis.

Results

Result of first hypothesis: there is a positive direct relationship between user readiness and the Jordanian culture. In order to examine the first hypothesis the researcher's used simple Regression, and result present in table (2).

Table (2) results of relationship between UR and CUL

R Square	F	sig	t
0.165	18.357	.000(a)	4.285

Result of second hypothesis: there is a positive direct relationship between technology alignment and the success of e-government implementation. In order to examine the second hypothesis the researcher's used the simple Regression, and result present in table (3).

Table (3) results of relationship between TA and e-Gov

R Square	F	sig	T
0.304	40.657	.000(a)	6.376

XI. DISCUSSION AND CONCLUSION

The table (2) shows that there is a relationship between UR and CUL, where UR variable showed that the value of ($R^2 = $ **0.165**) of variance of CUL variable, and the value of f was (**18.357**) which means that it has statistical significance at $\alpha \leq 0.05$, so we accept the first hypothesis ": there is a positive direct relationship between UR and CUL".

Table (3) shows that there is a relationship between TA and e-Gov, where TA variable showed that the value of ($R^2 = $ **0.304**) of variance of e-Gov variable, and the value of f was (**40.657**) which means that it has statistical significance at $\alpha \leq 0.05$, so we accept the second hypothesis ": there is a positive direct relationship between technology alignment and the success of e-government implementation".

This research has contributed in a practical way to a deeper understanding of the impact of culture when applying e-government in Jordan and if new IT technologies can be integrated successfully into government departments and institution, taking into account the achievement of successfully technology alignment within government agencies.

The results of this paper show that there is a positive direct relationship between user readiness and culture, also a positive direct relationship between technology alignment and e-government. The researchers suggest to have the same research in different countries in the Middle East, then to compare the results to better understanding and determine more factors that may effect on the uses of technology in e-government when applying e-government.

XII. REFERENCES

[1] , A. Al-Omari, H. Al-Omari, "E-Government Readiness Assessment Mode", *Journal of Computer Science,* Vol. 2 No. 11, 2006, pp. 841-845.

[2] H .Al-Omari, "E-Government Architecture In Jordan: A Comparative Analysis", *Journal of Computer Science*, Vol. 2 No. 11, 2006, pp. 846-852.

[3] L.Argote , B.McEvily, R. Reagans "Introduction to the Special Issue on Managing Knowledge in Organizations: Creating, Retaining, and Transferring Knowledge", *Management Science*, Vol. 49, No. 4, 2003.pp. v–viii.

[4] D.Calista, and J.Melitki, " E-Government And E-Governance: Converging Constructs Of Public Sector Information And Communications Technologies", *Public Administration Quarterly*, spring 2007, pp. 87-120.

[5] A. Carnall Colin, "Managing Change in Organizations, 4th ed", Pearson Education limited, Edinburgh gate, England, 2003,ch7, page 122, ch10, p. 171.

[6] H. Chan, and L. Wan, "Consumer Responses to Service Failures: A Resource Preference Model of Cultural Influences", *Journal of International Marketing*, Vol. 16, No. 1, 2008,pp. 72–97.

[7] J.Cook, M.Finlayson," The Impact of Cultural Diversity on Web Site Design", *SAM Advanced Management Journal*, Vol. 70 Issue 3, Summer 2005, pp.15-45.

[8] N. F. Doherty, I.Perry, "The Cultural Impact of Workflow Management Systems in the Financial Services Sector", *Service Industries Journal*, Vol. 21 Issue 4, Oct 2001, pp.147-166.

[9] M. Earl, "Experiences in Strategic Information Systems Planning", *MIS Quarterly*, Vol. 17 Issue 1, March1993, pp1-24.

[10] d. Feeny, L. Willcocks, "Core IS Capabilities for Exploiting information technology", *Sloan Management Review*, spring 1998, pp. 9-21.

[11] M. Gannon, "Understanding Global Cultures: Metaphorical Journeys through 28 Nations, Clusters of Nations, and Continents, Sage, Thousand Oaks", 2004.

[12] G. Hofstede, B. Neuijen, D. D. Ohayv, G. Sanders, "Measuring Organizational Cultures: A Qualitative and Quantitative Study Across Twenty Cases", *Administrative Science Quarterly*, Vol. 35 Issue 2, June 1990, pp. 286-316.

[13] G. Hofstede, "An Empirical Approach", *Journal of Management Studies*, Vol. 35 Issue 1, pp.1-12.

[14] K. Johns, L. Smith, Murphy, Strand, A .Carolyn, "How Culture Affects the Use of Information Technology", *Accounting Forum*, Vol. 27 Issue 1, Mar2003, pp.84-109.

[15] D. Jones Stedman, B.Crowe, "Transformation not Automation: The e-government challenge, Demos, London," 2001, pp. 11-13.

[16] G. Kearns, R. Sabherwal, "Strategic Alignment Between Business and Information Technology: A Knowledge-Based View of Behaviors, Outcome, and Consequences", *Journal of Management Information Systems*, Vol. 23, No. 3, winter 2007, pp. 129–162.

[17] C. Kothari, "Research Methodology", 3rd ed, New Age International (p) Ltd. , New Delhi, India, 2004,, ch4, page 56,60, ch6, pp. 95,100,111.

[18] J. M. Jermier, J. W. Slocum, L. W. Fry, J. Gaines, "Organizational Subcultures in a Soft Bureaucracy: Resistance Behind the Myth and Façade of an Official Culture," *Organization Science (2:2)*, May 1991, pp. 170-194.

[19] L. E. Dorothy, T. Kayworth, "A review of culture in information systems research: Toward a theory of information technology culture conflict", MIS Quarterly, Jun2006, Vol. 30 Issue 2, Jun 2006, pp357-399.

[20] J . Luftman, T. Brier, "Achieving and Sustaining Business-IT Alignment", *California Management Review*, Vol. 42 Issue 1, Fall 1999, pp109-122.

[21] G. Marczyk, D. DeMatteo, D. Festinger, Essentials of Research Design and Methodology, John Wiley & sons, Inc. , Hoboken, New Jersey, 2005, ch1, pp. 17-18, ch6, p. 163.

[22] B. McNurlin, R. Sprague, "Information System Management In Practice", 7th ed, *Pearson Education*, Inc., Upper Saddle River, New Jersey, 2006,ch2, p. 90.

[23] D. Miller, N. Salkind, "Handbook of Research Design & Social Measurement, 6th ed, Sage Publications, USA, 2002, ch2, pp. 51-52.

[24] A. M. Pettigrew, "On Studying Organizational Cultures," *Administrative Science Quarterly (24:4)*, December 1979, pp. 570-581

[25] A.Ranerup, "Electronic Government as a combination of human and technological agency: Testing the principle of symmetry", *Information Polity: The International Journal of Government & Democracy in the Information Age*, Vol. 12 Issue 3, 2007, pp. 153-167.

[26] Readiness For Electronic Government ProcuremenT, Inter-American Development Bank.

[27] H. Reich, I. Benbasat, , "Factors That Influence The Social Dimension Of Alignment Between Business And Information Technology Objectives", *MIS Quarterly*, Vol. 24 Issue 1, March 2000, pp. 81-113.

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