

Cultural Impact on Information Technology Use and Implementation in the Arab World

(Research-in-Progress)

Yousif Alhashemi

Heinz Roland Weistroffer

Virginia Commonwealth University

Abstract

Most published research on IT application has been in the context of western countries, viz. Europe and North America. Little research has been published on IT implementation in the Arab world. But better understanding of the role of Arab culture on IT use may help in providing guidance for more successful implementation of IT in the future. To help determine this role we reviewed 23 papers published in academic journals and conferences between 2003 and 2014.

Key words: Culture, Arab world, information technology

I. Introduction

Kuchinsky (1996) writes that all too often, new technologies fail in the marketplace because of flawed assumptions about considerations totally unrelated to technical merit. And, as Collins (2001) points out, a major factor impacting successful use and implementation of information technology (IT) is culture. Most published research on IT application has been in the context of western countries, viz. Europe and North America. Little research has been published on IT implementation in the Arab world. But better understanding of the role of Arab culture on IT use may help in providing guidance for more successful implementation of IT in the future. To help determine this role we reviewed 23 papers published in academic journals and conferences between 2003 and 2014. The specific research question we are focusing on is: What are the dynamics of the interrelationships between IT and the culture in the Arab world?

II. Background

2.1 Culture

To research the role of Arab culture, we first need to have an understanding of what is meant by culture, and specifically, Arab culture. The term culture has been widely used and abused, and many definitions have been put forward, both in the IT context and independently of IT. The anthropologist Edward B. Tylor describes culture as "that complex whole which includes knowledge, belief, art, law, morals, custom, and any other capabilities and habits acquired by man as a member of society" (Tylor 1871). Another anthropologist, Edward Hall states that "culture is communication and communication is culture" (Hall 1959). Hofstede (2002) describes culture as the "collective programming of the mind that distinguishes the members of one group of people from those of another." Straub et al. (2002) suggest that "culture is primarily a manifestation of core values." Leidner and Kayworth (2006) state that "values represent a manifestation of culture that signify espoused beliefs identifying what is important to a particular cultural group." Quoting Ibn Khaldun, the 14th century Arab sociologist, "man is the son of his customs and his habits, not of his nature and constitution" (Polk 2001).

2.2 Arab World

To specifically discuss Arab culture, we need to first determine which countries make up the Arab world. While the Arab people originated in the Arabian Peninsula, Arab language, together with Islam, has spread in much of Northern Africa and the Middle East. Generally, the Arab world is associated with the countries where Arabic is the official language, which includes mainly the 22 countries that make up the Arab League. However, not all people living in countries of the Arab League consider themselves Arabs, as for example the Berbers of North Africa and the Kurds of Syria and Iraq. And some countries that are not part of the Arab League also have Arabic as one of their official languages, as for example Israel. Nevertheless, the Arab League (see Fig. 1) as defining the Arab World is the most common definition and also seems most practical for our research. These are in alphabetical order: Algeria, Bahrain, Comoros, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Qatar, Saudi Arabia, Somalia, State of Palestine, Sudan, Syria, Tunisia, United Arab Emirates, and Yemen (Encyclopædia Britannica 2015).



Figure 1. Countries of the Arab League (in green) (Encyclopædia Britannica 2015)

2.3 Arab Culture

While Arab culture is often associated with Islam, many predominantly Muslim countries do not consider themselves Arab, as for example Turkey, Iran, Pakistan and Bosnia. Also, not all Arabs are Muslims, as there are considerable Christian minorities in many Arab countries, as for example Palestine, Lebanon, and Iraq. Arab countries also differ considerably in their affluence. Some countries, such as the countries forming the Gulf Cooperation Council (GCC), viz. Bahrain, Saudi Arabia, Kuwait, Oman, Qatar, and the United Arab Emirates, differ from the other Arab countries with respect to oil production and the resulting prosperity. The other Arab countries are generally poor or with limited wealth. There are many problems affecting the countries of the Arab world in different ways and at different levels (Hamade 2009).

2.4 Information Technology

Information technology, often also referred to as information and communication technology (ICT), includes a wide range of technologies, such as consumer-focused technologies like mobile phones, personal computers, the Internet, social networking technology, and satellite TV, but also e-business, e-commerce, e-government, and back-office technology.

III. Literature Review

3.1 Selection of Articles

To answer our research question as to the dynamics of the interrelationships between IT and the culture in the Arab world, we tried to find publications that included both IT and culture as significant themes in the context of the Arab world. We searched databases such as ABI/inform, as well as contents of leading journals and proceedings of major conferences for relevant articles. Our initial search yielded 129 articles, reduced to 23, after examining for our criteria of dealing with IT and culture in the Arab world. Table 1 lists the 23 articles.

3.2 Reviews

Hamade (2009)

Information and Communication Technology in Arab Countries: Problems and Solutions

Major problems have been hindering the otherwise rapid growth of ICT in the Arab World. Many of those countries in the area experience these problems in one of two categories: the first is related to the infrastructure, and the other has to do with governments' policies and regulations. Although the transition from wired to wireless solutions lowers costs in the long-term, most of the proposed solutions, due to the lack of privatization, are at the hands of government officials. As a result, ICT development in the area begs for more freedom, democracy, and intellectual property protection.

Maghrabi and Palvia (2012)

Understanding Information Technology (IT) Induced Changes in Culture

Internet, World Wide Web, among other relevant ICTs has reached many households. Many of those ICTs have a facilitating and mediating effects on activities bound by culture. In this regard, research is suggestive of the fact that communication technologies are able to influence behavior. The objective of this paper is to explore the impact of IT on culture, generally, and on its various components (values, norms, and behavior). This objective is pursued by means of phenomenological methodology and is the data collection stage. The authors' further aim is to provide other views of the linkage between IT and culture.

Rouibah (2007)

Does Mobile Payment Technology Mnet Attract Potential Consumers? The Case of Kuwait

This study examines the factors that influence mobile payment adoption, namely Mnet. The study draws on the technology acceptance model, gratification research, and theory of reasoned action, through the moderation effect of gender and experience. One of the two employed research methodologies is a quantitative field study of students. The developed instrument measures a total of six variables (social norms, enjoyment, ease of use, usefulness, trust, and privacy) in their effects on the intention to use Mnet. 175 responses are put through a regression analysis and are found gender and experience as the prominent factors for Mnet acceptance. The second methodology is a qualitative analysis of the respondents' free format comments. The results of the two methods reinforce one another and indicate both encouraging and discouraging factors that impact the acceptance of Mnet needing further research.

Authors	Title	Source
Akhter	A Case Study: Adoption of Information Technology in E-Business of United Arab Emirates	IEEE International Conference on e-Business Engineering (ICEBE), 2007
Al Omoush et al.	The Impact of Arab Cultural Values on Online Social Networking: The Case of Facebook	Computers in Human Behavior, 2012
Al-Jabri & Roztockki	Adoption and Use of Information Technology in Mandatory Settings: Preliminary Insights from Saudi Arabia	16 th Americas Conference on Information Systems (AMCIS), 2010
Al-Mabrouk & Soar	Identification of Major Issues for Successful IT Transfer in the Arab World: The Preliminary Results	Innovations in Information Technology, 2006
Al-Mayahi & Mansoor	UAE E-government: SWOT analysis and TOWS Matrix	10 th International Conference on ICT and Knowledge Engineering, 2012
Aldraehim et al.	Cultural Impact on E-Service Use in Saudi Arabia: The Need for Service Oriented Culture	19 th Americas Conference on Information Systems (AMCIS), 2013.
Al-Hinai et al.	Understanding IT-Culture Conflict: The Case of Arab Women, Virtual Relationships, and Conservative Cultures	20 th Americas Conference on Information Systems (AMCIS), 2014
Alnajjar	A Conceptual Model of Mobile Commerce Acceptance in Collectivist Cultures	International Conference on Innovation Management and Technology Research (ICIMTR), 2012
Alotaibi & Bach	Consumer Awareness and Potential Market for e-Commerce in Saudi Arabia: Challenges and Solutions	ASEE Zone I Conference, 2014
Eid & Al-Anazi	Factors Influencing Saudi Consumers Loyalty Toward B2C e-Commerce	14 th Americas Conference on Information System (AMCIS), 2008
El Louadi & Everard	Information Technology and the Arab World: A Question of Culture	10 th Americas Conference on Information System (AMCIS), 2004
Hamade	Information and Communication Technology in Arab Countries: Problems and Solutions	6 th International Conference on Information Technology: New Generations, 2009
Jewels et al.	eBusiness Use in the United Arab Emirates: Lessons for Evolving Markets	15 th Americas Conference on Information System (AMCIS), 2009
Khan et al.	Information Technology Adoption, Possible Challenges, and Framework of Supply Chain Management: A Case Study of a Leading Gulf Economy	International Conference on Engineering Technology and Technopreneurship (ICE2T), 2014
Khushman & Amin	The adoption of E-business websites within Arab and UK cultures (Comparison study)	International Conference on Developments in eSystems Engineering (DeSE), 2011
Khushman et al.	The Relationship between Culture and e-Business Acceptance in Arab Countries	International Conference on Developments in eSystems Engineering (DeSE), 2009
Koshy	Factors that affect the use of Facebook and Twitter as marketing tools in the UAE	18 th Annual International Conference of the UK Academy for Information Systems, 2013
Loch et al.	Diffusing the Internet in the Arab world: The role of social norms and technological cultururation	IEEE Transactions on Engineering Management, 2003
Lowry	Translation and Validation of the Technology Acceptance Model and Instrument for Use in the Arab World	ACIS Proceedings, 2004
Maghrabi & Palvia	Understanding information technology (IT) induced changes in culture	18 th Americas Conference on Information Systems (AMCIS), 2012.
Rouibah & Abbas	Effect of personal innovativeness, attachment motivation and social norms on the acceptance of camera mobile phones: an empirical study in an Arab country	International Journal of Handheld Computing Research, 2011
Rouibah	Does Mobile Payment Technology MNET Attract Potential Consumers? The Case of Kuwait	ACIS Proceedings, 2007
Rouibah	Trust Factors Influencing Intention to Adopt Online Payment in Kuwait	Proceedings of the Southern Association for Information Systems (SAIS) Conference, 2012

Table 1. List of Reviewed Articles

Rouibah (2012)

Trust Factors Influencing Intention to Adopt Online Payment in Kuwait

Trust in online payment within an Arab culture is the theme of this study. A theoretical model is developed to exhibit the impact of five exogenous variables (internet experience, personal

innovativeness, familiarity, propensity to trust, and presence of third party seal) on the intention to use online payment. Those variables are mediated via three endogenous variables (perceived enjoyment, perceived risk and perceived trust). Data was collected from 150 and 200 through online and paper-based questionnaires, respectively. The findings can assist in designing payment websites that are better perceived by the individuals from cultures in Arab-speaking countries.

Aldraehim et al. (2013)

Cultural impact on e-service use in Saudi Arabia: The need for Service Oriented Culture

The study reports the results of a mixed method approach to investigating the extent of cultural values on e-service use in Saudi Arabia. The authors assert that Service Oriented Culture (SOC) impacts e-service usage. Both qualitative and quantitative studies found a relationship, although SOC is not a positive predictor of the intention to use e-services in Saudi Arabia. The study also found that cultural values indeed have a contribution toward the enhancement of ICTs implementation and use.

El Louadi and Everard (2014)

Information Technology and the Arab World: A Question of Culture

Developing countries focus on their economic development through the use of IT and its applications. Many of the factors that either facilitate or inhibit the adoption of IT have been studied in the past. This paper, however, focuses on the little understood nature of the significant cultural factors in IT adoption. Additionally, the models that do incorporate culture as a variable cannot be fully adapted to the Arab world. To address this, the study suggests ways of altering existing models and theories to better explain the phenomenon of delayed IT adoption in Arab countries.

Khushman and Amin (2011)

The adoption of E-business websites within Arab and UK cultures (Comparison study)

This is a comparative study that investigates the cultural difference between Arab and UK cultures in terms of their acceptance of e-commerce. Detailed variables were used in Sensitive Technology Acceptance Model to explain users' acceptance behavior. A variety of methods (Mean and T-test, Pearson and correlation coefficient) were adopted to analyze the research data and the results indicate significant relationship between the cultural aspects and the acceptance of e-commerce.

Jewels et al. (2009)

eBusiness Use in the United Arab Emirates: Lessons for Evolving Markets

The United Arab Emirates has been diversifying in non-oil investments since the 1990's. With this goal in mind, the nation set its efforts on becoming a strategic hub that attracts foreign and domestic investments. Appropriate e-business frameworks and infrastructures are needed to realize this objective. The study describes the use of everyday e-business in UAE as stifled. Using an autoethnographic research methodology along with qualitative interviews of stakeholders, the study investigates into the reasons for the low adoption levels of e-business by resident of UAE. The final results improve the understanding of local cultures that need to be accounted for in e-business initiatives, even though these issues may not be applicable in other regions.

3.3 Discussion of Findings

The examination of the research papers paints a vivid picture of the interrelationship between IT and culture in Arab-speaking countries. One general consensus among the research authors is that culture, positively and negatively, have a profound effect on the various phases of IT development and implementation. A major contributing entity to this dynamic is the government, both at the local and national levels. Because of the political structure of those countries, its economic assets such as IT are under the control of government official.

A closer look at the other face of the same coin, IT has profound effects on cultural values and norms in various capacities. Aside from improving the everyday lives of Arab-speaking countries, some perceptions remain skeptical of new technologies. Trust can play a major cultural barrier that has been increasingly challenged by IT in various forms such as it substitutes human-touch with websites and mobile applications that may be viewed as solicitation of users' private information. The culture in Arab-speaking countries is one that firmly believes in the mutual trust between human beings and in the word-of-mouth. The absence of such interaction hurdles even the technologies that may potentially lead to more convenient ways of living for those individuals. It is therefore recommended to adapt a design for websites and applications with culture in mind.

Providing education on both the dangers and benefits of e-business and e-commerce to investors and residents proves beneficial to realize the fruits of IT investments throughout the design and development stages. Even so, education itself needs to be consciously geared towards the respective culture in a particular Arab-speaking country for the sake of avoiding any backfiring on sensitive and controversial fronts including religions and politics.

IV. Contributions, Limitations and Future Research

“There is no gain without risk, perhaps no risk without love” (King 2002). A general rule of thumb is that under investigated (unexplored) topics merit investigation as to why it has not yet been explored. The journals in the "basket of 8" did not yield any published research in the Arab world. Furthermore, culture, as a crucial substance of any transaction in the world has yet to be even cited, in any capacity. The light recognition of the potential role that the Middle East has in the world, in general, and to our IS field, specifically, is therefore worthy of scientific investigation.

The scope of the review was limited due to the scarcity of the research available on our topic in this paper. Additionally, the research stream was evident mainly in conference proceedings, which often consists of incomplete and methodically less rigorous research than journal publications. On the other hand, papers presented at conferences generally represent more current research, often still in-progress, with fresh topics considered “hot”. Although journal publications undergo a rigorous review process, unfortunately by the time of publication, the field often has progressed considerably.

References

- ABI/INFORM Global. (n.d.) Retrieved May 1, 2015, from <http://rdl.lib.uconn.edu/databases/844>
- Akhter, F. (2007) A Case Study: Adoption of Information Technology in E-Business of United Arab Emirates. *IEEE International Conference on e-Business Engineering (ICEBE)*, 2007, pp. 383-387.

- Aldraehim, M.S., Edwards, S.L., Watson, J., and Chan, T. (2013) Cultural impact on e-service use in Saudi Arabia: The need for Service Oriented Culture, *19th Americas Conference on Information Systems (AMCIS)*
- AlHinai, Y., Ali, M., and AlQuodhi, W. (2014) Understanding IT-Culture Conflict: The Case of Arab Women, Virtual Relationships, and Conservative Cultures, *20th Americas Conference on Information Systems (AMCIS)*.
- Al-Jabri, I. M., and Roztock, N. (2010) Adoption and Use of Information Technology in Mandatory Settings: Preliminary Insights from Saudi Arabia, *16th Americas Conference on Information Systems (AMCIS)*.
- Al-Mabrouk, K., and Soar, J. (2006) Identification of major issues for successful IT transfer in the Arab World: the preliminary results. *IEEE Conference on Innovations in Information Technology 2006*, pp. 1-5.
- Al-Mayahi, I., and Mansoor, S.P. (2012) UAE e-government: SWOT analysis and TOWS matrix. In *10th IEEE International Conference on ICT and Knowledge Engineering*, pp. 201-204
- Alnajjar, G., Mahmuddin, M., and Thurasamy, R. (2012) A conceptual model of mobile commerce acceptance in collectivist cultures, *International Conference on Innovation Management and Technology Research (ICIMTR) 2012*, pp. 63-618
- Al Omoush, K.S., Yaseen, S.G., and Alma'Aitah, M.A. (2012) The impact of Arab cultural values on online social networking: The case of Facebook. *Computers in Human Behavior* 28(6): 2387-2399.
- Alotaibi, A.O., and Bach, C. (2014) Consumer Awareness and Potential Market for e-Commerce in Saudi Arabia: Challenges and Solutions. *ASEE Zone I Conference 2014*.
- Arab League (2015) *Encyclopædia Britannica*, Retrieved September 11, 2015 from <http://www.britannica.com.proxy.library.vcu.edu/topic/Arab-League>
- Collins, J.C. (2001). *Good To Great: Why Some Companies Make the Leap—and Others Don't*, Random House.
- Eid, M., and Al-Anazi, F.U. (2008) Factors influencing Saudi consumers loyalty toward B2C e-commerce, *14th Americas Conference on Information Systems (AMCIS)*.
- El Louadi, M., and Everard, A. (2004) Information technology and the Arab world: a question of culture, *10th Americas Conference on Information Systems (AMCIS)*.
- Hall, E.T. (1959) *The Silent Language*, New York.
- Hamade, S.N. (2009) Information and communication technology in Arab countries: Problems and solutions, *Sixth IEEE International Conference on Information Technology: New Generations, (ITNG'09)*, pp. 1498-1503.
- Hofstede, G. (1991) *Cultures and Organizations: Software of the Mind*, London: McGraw-Hill.
- Hofstede, G., Neuijen, B., Ohayv, D. D., & Sanders, G. (1990). Measuring organizational cultures: A qualitative and quantitative study across twenty cases. *Administrative science quarterly*, 286-316.

- Jewels, T., Ghanem, A., Mongeal, A., Nuaimi, E., Ajaaidi, A., Al-Kaf, A., and Nuaimi, A. (2009) eBusiness use in the United Arab Emirates: Lessons for evolving markets, *15th Americas Conference on Information Systems (AMCIS)*.
- Khan, H. U., Artail, H. A., Malik, Z., and Niazi, M. (2014) Information technology adoption, possible challenges, and framework of supply chain management: A case study of a leading gulf economy. *4th IEEE International Conference on Engineering Technology and Technopreneurship (ICE2T)*, pp. 1-5.
- Khushman, S., and Amin, S. (2011) The adoption of E-business websites within Arab and UK cultures (Comparison study). *IEEE Developments in E-systems Engineering (DeSE)*, pp. 333-338.
- Khushman, S., Todman, A., and Amin, S. (2009) The relationship between culture and e-business acceptance in Arab countries. *2nd IEEE International Conference on Developments in eSystems Engineering (DESE)*, pp. 454-459.
- King, S. (2002) *Pet Sematary*, New York: Pocket Books.
- Koshy, S. (2013) Factors that affect the use of Facebook and Twitter as marketing tools in the UAE, *18th Annual International Conference of the UK Academy for Information Systems, UK Academy for Information Systems*, pp. 1-7
- Kuchinsky, A. (1996) Transfer means more than just technology, *Communications of the ACM* 39(9): 28-29.
- Leidner, D.E., and Kayworth, T. (2006) A review of culture in information systems research: toward a theory of information technology culture conflict, *MIS Quarterly* 30(2): 357-399.
- Loch, K.D., Straub, D.W., & Kamel, S. (2003) Diffusing the Internet in the Arab world: The role of social norms and technological cultururation, *IEEE Transactions on Engineering Management* 50(1): 45-63.
- Lowry, G. (2004) Translation and validation of the technology acceptance model and instrument for use in the Arab world, *ACIS 2004 Proceedings*, 105.
- Maghrabi, R., and Palvia, P. (2012) Understanding information technology (IT) induced changes in culture.
- Peng, M. (2010) Research streams, Retrieved May 4, 2015, from http://www.utdallas.edu/~mikepeng/documents/CV201101_ResearchStream.pdf.
- Rouibah, K. (2007) Does mobile payment technology Mnet attract potential consumers? The case of Kuwait, *ACIS 2007 Proceedings*, 24.
- Rouibah, K., and Abbas, H. (2011) Effect of personal innovativeness, attachment motivation and social norms on the acceptance of camera mobile phones: an empirical study in an Arab country, *International Journal of Handheld Computing Research*, 2(1): 72-93.
- Rouibah, K. (2012) Trust factors influencing intention to adopt online payment in Kuwait, *Proceedings of the Southern Association for Information Systems Conference*, pp. 195-202.
- Senior Scholars' Basket of Journals. Association for Information Systems. December 11, 2011. Accessed January 10, 2015. <http://aisnet.org/?SeniorScholarBasket>.

Sirin, S.R., and Balsano, A.B. (2007) Editors' introduction: Pathways to identity and positive development among Muslim youth in the west, *Applied Development Science* 11(3): 109-111.

Straub, D., Loch, K., Evaristo, R., Karahanna, E., and Srite, M. (2002) Toward a theory-based measurement of culture, *Human Factors in Information Systems*, 61-82.

Tylor, E.B. (1871) *Primitive Culture: Researches into the Development of Mythology, Philosophy, Religion, Art, and Custom*, Vol. 2, Murray.

Van Slyke, C. (Ed.) (2008) *Information Communication Technologies: Concepts, Methodologies, Tools, and Applications*, Vol. 2, IGI Global.