

# The Impact of Information and Communication Technology on Sustainable Competitive Advantage in Jordan<sup>1</sup>

Dmaithan almjali

Faculty of economic and administrative science, Zarqa University

E-mail: almjalidmaithan@yahoo.com

## Abstract

Many industry in Jordan are currently annoyed with the benefit and value obtained from their investment in IT. The role of IT in the organization has evolved with time. IT has been treated as a cost center for a long time.. In-depth qualitative interviews with IT managers in Jordanian sectors suggest that IT implementation success and IT managerial resource are the most important factors which are representative of the gap between managers and ICT utilization and its effect on sustainable competitive advantage. The lack of these factors hinders organizations from achievement benefits from their investment in IT. From the findings of this study, it is found that the these factors effect directly on ICT utilization and its effect on missing sustainable competitive advantage

**Keywords:** Sustainable competitive advantage, ,IT investment, IT implementation success, IT managerial resource.

## 1.Introduction

Most developing countries have recently started realizing the important role which information and communication technology (ICT) can play to explain their development problems. Arabic countries, as part of the developing countries, present a unique setting. The complex societal beliefs and values of the Arab world provide a rich setting to investigate the issues of ICT diffusion and transfer and is a very strong predictor of resistance to ICT transfer (Straub et al., 2001). Thus, the researchers are interested to investigate this issue in Jordan as a developing country, and explore the relationship between ICT diffusion and organization culture and its impact on sustainable competitive advantage. Moreover, Arab countries face common challenges in view of the absence of a well developed technology system and the lack of ICT culture. According to Aldmour (2009), there are many challenges that face Jordanian organizations in terms of ICT applications. Firstly, there is an increasing demand for expertise and skilled ICT people, and secondly, managers' resistance to agree to new ideas. There is also an increasing investment cost for ICT tools and maintenance cost for hardware and software and telecommunications that can lead to sustainable competitive advantages and opportunities being missed out, increase in time wasted, increase in costs, all of which result in the creation of a negative environment for IT investments (al-Faouri, 2004). Keen (1991) stated that IT success generally reflects an effective relationship between business managers and IS managers, and is the main contributor to successful vendor relations. Chan et al. (2006) explained that competent IT colleagues are more likely to be trusted and consulted in the decision-making process. They become more aware of both existing and new business opportunities, and have the practical knowledge not just in operating within existing markets, but also with a newly-emerging market. Successful history of IT unit gives reliability to the IT unit and creates complimentary perceptions of IT in top management (Chan et al., 2006; Earl, 1993; Hu & Huang, 2005; Reich & Benbasat, 2000; Rockart et al., 1996). Also, it essentially contribute to the involvement of business managers in the planning process (Teo & Ang, 1999).

### 1.1The Actual Utilization of Information and Communications Technology in Jordan in General

Jordan recently (1999) started exploring the use of ICT to enhance the development of its economy and to achieve a successful integration with the global environment. His Majesty King Abdullah II launched an ambitious strategy aimed at transforming Jordan into a knowledge-based economy and society, and positioning the Kingdom as the leading ICT hub in the region. This is in line with Gholami et al (2004) who found a positive correlation between ICT utilization and economic development. In April 2002 Jordan's Ministry of Information and Communication Technology was established. Some efforts have already been made to build an ICT industry that is based on a logical ICT strategic vision at the national level . The development of the telecommunication sector that started in 1995 could be seen, from the technical point of view, as the main building block towards the attainment of the government plan.

According to the Ministry of ICT report Jordan shall become a regional ICT leader and an internationally recognized exporter of ICT products and service, exploiting its core human capital advantage.

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Jordan is blessed with a highly educated population and qualified public sector. The Jordan E-Government Program has taken advantage of this and has promoted and initiated a government wide ICT literacy programme which has seen phenomenal success. This, together with the e-government flagship government services network, has contributed to the promotion of a more connected government, better equipped to service citizens.

In January 2000 Jordan Telecom sold 40% of its shares to the French Telecom. That, with the acquisition of a 40 percent share in the company, gives a majority in the board of directors to the French Telecom in the form of full management control, creating a successful venture and solidifying France Telecom's commitment to Jordan.

The researcher try to analysis of some documents about ICT strengths and weakness in Jordan.

Table1 : ICT Strengths and Weakness in Jordan

ICT Strengths	ICT Weakness
Existence of a highly educated work force	Lack of IT expertise to develop and manufacture the IT system
Low labour costs	Old weak telecommunication infrastructure
High demand on ICT and a high interest in new technologies	Lack of funding to support IT projects. At the same time high piracy rate
Existence of plans to enhance and expand existing infrastructure	Resistance to change from manual to automated system

### 1.1.1 ICT related to competitive advantage

For organizations to stay competitive in a dynamic business environment, they have to determine and understand how to manage IT strategically as a key success factor for a successful business in a dynamic business environment that supports business strategies and processes (Henderson & Venkatraman, 1993). The importance of the strategic use of technology based IT for effective organizational performance that makes a contribution to the creation of business value is well recognized (Henderson & Venkatraman, 1993; Luftman et al., 1993). The role of IT in the organization has evolved with time. IT has been treated as a cost center for a long time (Porter & Millar, 1985). However, now it has been considered as an enabler to achieve competitive advantage

## 2. Research methodology

Most of the concepts in this study have been occasionally examined before, but mostly in the Western context. Only a little work covers Arab country. Thus, to gain deeper understanding of the issues in the Jordanian context, this research conducted a qualitative study to explore the factors which influence the implementation of IT and its impact on possessing sustainable competitive advantage. Using a qualitative approach provides richer details for exploring view points in the early stage of research, allowing the researcher to gain a better initial understanding of the problem and to identify phenomena, attitudes and influences (Healy and Perry, 2000; Maxwell, 1996). The respondents were IT managers in the firms who have responsibility for IT functions of their companies. The qualitative research consisted of face-to-face in-depth interviews with IT managers. The interviews were conducted in a semi-structured format that allowed respondents to express their own view points (Flick, 2002). A set of interview topics guided the interview, with a list of probing questions to draw out respondent opinions. Topics were discussed as brought up by respondents occasionally supplemented by new issues that arose in the interviews.

All in-depth interviews were conducted in the Arabic language. (Quotes in discussion were translated into English ). Extensive notes were taken during the interview. We highlight here key issues mentioned in each interview and combined the most common issues mentioned by the interviewee. To identify the major issues to the factors which affect the implementation of IT and its effect to possess sustainable competitive advantage , passages and rewording of the same or similar interpretations were summarized and categorized according to the four dimensions discussed above.

The following Table 2 presents the profile of the informants interviewed:

"Table 2: Summary of issues". Informant Profile

Number	Gender	Age	Position	Experience	Sector
1	Male	36	IT manager	6	Banking
2	Femal	45	IT manager	7	Service
3	Male	52	IT manager	9	Insurance

## 3.Finding:

The content analysis determined two critical issues related to information and communication technology which can be roughly categorized into two dimensions as previously discussed, *i.e.* IT

*implementation success ,IT managerial resource*

### **IT Implementation Success Issues:**

It refers to management's ability to conceive, develop, and exploit IT Applications. The success of IT implementation is very important for IT managers to enhance the firms' services and processes. In this context, the following IT managers emphasized the importance of IT implementation. The following is a reflection of this view as can be seen from the three quotes from respondents:

#### **IT1 Banking:**

I find IT utilization will offer a lot of benefit for business department, for example applied automation system will increase the productivity and decrease the effort and time for workers.

#### **IT2 Service:**

We have skills and proficiency in their employees, it is very easy to provide them with an updated technology .There are many experts available to the firm to develop a website on internet use and email.

#### **IT3 Insurance:**

Some people at the managerial level feel that they are at risk and they should refuse new IT, so failures also pose a threat to the working relationship between IT and business executives by lowering trust, cooperation and support from users and management.

The above three IT experts recognized the importance of successful IT utilization. Therefore, the above findings provide strong evidence for a relationship between IT implementation success and organization's success.

### **IT Managerial Resource Issue**

Shared knowledge between business and IT managers is very important to enhance the IT managers' ability to exploit the firms' products, services, and processes. Moreover, IT managers stated the following regarding importance of business-IT shared knowledge. They gave several examples expressing that they understand and appreciate the business environment in terms of roles, tasks, and aims. Also, the business managers understood and appreciated the work undertaken by the IT department. The following manager considered IT as a very important factor in the sustainability of a firm:

#### **IT1 Banking:**

shared knowledge will help us to make our requirements much clearer, we will be able to understand the requirements of the other side. In this company, we have both sides. As IT people, we work as businessmen, since we know most of the business of the bank. On the other side, the management is aware of IT, they reply our needs. Also They are aware of the IT implications, additionally, we have common concerns and our relationship is reciprocal.

#### **IT2 Service:**

I think the GM (general manager) is keen on integrating the latest technology in the world. However, he does not have complete knowledge of the details of IT. He may have a real desire to know more. Also, as an IT manager, I know where I have to go. I have a very clear plan for the end of this year and for five years later. Also, my major target is to maximize the applications of IT solutions in the company.

#### **IT3 Insurance:**

Shared knowledge between business and IT managers is vital issue to understand each other. When the IT suggests that a certain point is applicable and should or must be done in a certain way, the management will understand. In this company they really appreciate and understand the IT needs besides their business needs. However, from my experience, I have seen a case in a company where the management did not understand the IT basis, they asked for some things that are too difficult to implement or they cannot measure the real means for certain projects. So they overestimated or underestimated the situations. But if there is good understanding of the IT basis from the management, then this will help both the IT and the management.

Pondering over the above quotes, we realize that the three IT experts recognized the importance of understanding and appreciating the business tasks and objectives. They also recognize the significant positive role which IT plays in affecting their products and services. Therefore, the above findings provide strong evidence for the potential relationship that can be established between knowledge sharing, business strategy, and IT strategy.

### **ICT and SCA Issues**

Results from interviews indicated that there was a great level of concern between IT department and top management. Some of the interviewees express the potential benefit of interaction between IT department and business department to achieve sustainable competitive advantages.

**IT1 Banking:**

In my organization the management tries to control us for our department’s basic needs and infrastructures like purchasing some computers. I remember that one day the management consulted me to buy some laptops, which, I thought, they should not purchase. However, they bought those laptops, and after using them for one month, I was asked to fix those computers, something which was not my responsibility from the beginning. As an IT manager I understand that the management worries about the costs. So I always try to find a midpoint between them and me to achieve equilibrium combination of cost and quality. So I am looking for a good price with acceptable – quality product.

**IT2 Service:**

In our business I can frankly say that during the ERP implementation we managed in one way or another to minimize the cost in some areas. We also managed to minimize the scrap. The scrap itself is very costly in our business, so we managed that by taking care of some applications here and there, like inventories, the work cycle itself, the business cycle, and we have paid much more attention to some minor issues which other production managers and other managers were not aware of. While we implemented these applications, we were able to discover and find where these scrap and waste go, and we managed to minimize the cost. Luckily, the business managers appreciated what we did. Also, fortunately, one of the member in the board of directors is an IT specialist, and some of them are engineers and know exactly what IT is, what are its needs, and how to use IT for the benefit of the company and for improving the business. So they started helping us. In other cases there were some situations in which the working relationship between IT department and business department was at risk.

**IT3 Insurance:**

Based on the management’s requirements, we provide them MIS reports, including some statistical points, ATMs, and types of clients. Such reports help the management to achieve their goals, and eventually lead to a higher grading in the organization rank list. Now we are classified by companies from outside as B++ grade, which is a good grade for the funding and relations points of view. Regarding the performance of the organization, we are one of the best-performing organizations in the country. This comes from mutual relations between us and the management, which leads to higher profitability and performance.

Looking at the above comments, most of the interviewees in this study expressed their benefit from ICT utilization which leads to higher profitability and performance.

**4. Conclusions**

These in-depth interviews demonstrate that there are still some factors that affect on IT and its impact on sustainable competitive advantage. In summary, there are basically two factors which affect on IT and its impact on sustainable competitive advantage. IT managerial resource revolve around higher level of knowledge sharing between IT department and top management, which affect integration between IT strategy and business strategy. Finally, IT implementation success happens if the managers have higher success of IT utilization that will enhance sustainable competitive advantage.

The following Table summarizes the main issues related to the interview.

"Table 3: Summary of issues".

Issues	IT1 banking	IT2 service	IT3insurance
IT managerial resource	Higher level of sharing knowledge between IT department and top management	lower level of shared knowledge between IT department and top management	There is a Lowest level of sharing knowledge between IT department and top management
IT implementation success	Having higher success of IT utilization	Having higher success of IT utilization	Having lower success of IT utilization
ICT and sustainable competitive advantage	A Great level of concern between IT department and top management, also higher profit	A Great level of concern between IT department and top management, but less profit	There is a Great level of concern between IT department and top management, also higher profit.

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