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MINIMIZING ERP RISKS WITH IT CULTURE

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Abstract

This paper adds to the knowledge on the implementation of enterprise resource planning systems (ERP) in small to medium-sized enterprises (SMEs). It suggests that IT culture might mitigate the risk of ERP system implementation. IT culture in the context of this paper is referred to as the existence and the increase of the unified regulation standardization relating to IT, knowledge-sharing regarding the use of organizational systems and the extent of the use of Internet. We conducted in-depth interviews with ERP-SME consultants. Based on the analysis of these interviews we have noticed that in organizations where the existence of IT culture was identified exceeding the planned vs. actual implementation hours was not found. When the existence of an IT culture was not identified exceeding the planned vs. actual implementation hours was found. Based on this work we recognize comparatively unexplored fields of IT culture. It is it important to explore IT culture in the context of the concepts mentioned above to mitigate risk factors that have emerged in ERP implementations.

Keywords: Enterprise resource planning, ERP, IT culture in ERP, risk, cultural challenges.

1. INTRODUCTION

To add to the knowledge on the implementation failure factors of enterprise resource planning (ERP) in organizations, this paper suggests that IT culture might mitigate the risk of ERP system implementation, especially when implementing a "foreign" enterprise system (ES).

IT culture in the context of this paper is referred to as the existence and the increase of the unified regulation, standardization relating to IT, knowledge-sharing regarding the use of organizational systems and the extent use of the Internet as a concept within the enterprise.

The professional literature shows culture as a significant factor for operational success, but this paper distinguishes between the "world of culture" and the "world of IT" where IT culture is a segment of IT and is not part of the commonly researched area of culture.

Preliminary evidence reinforces general researched notions that culture is a crucial factor at any operational level or field and in particular it emphasizes a new un-researched notion - IT culture that establishes the concepts mentioned above to mitigate risk factors that have emerged in ERP implementations.

The Israel State Comptroller (2010) included a chapter regarding the failure of "management health care centre information systems" used by state hospitals, known as the "Namer" in the state audit report for 2009. This pertains to risk factors that have emerged in ERP implementations. The Namer was intended to support the operation of state hospitals in Israel using the SAP platform. The findings of the audit report indicate that the ERP project was characterized by 12 years of overrun budget to the tune of millions of dollars, and 6 years of delays. The summary and recommendations of, the audit report are narrowed to the need for control, for methodology, and for knowledge preservation that should be implemented and enforced by the organization, in this case the state hospitals.

In recent years wisdom and maturity of the implementation of ERP systems regarding factors that could mitigate inherent risks therein afforded the formulation of the following hypothesis:

> *"In organizations that rely on IT culture as a strategy, resulting from unified regulation, standardization, knowledge-sharing regarding the use of organizational systems and certainly the use of the Internet, the amount needed for ERP systems adjustment (customization and localization) in an organization is sometimes reduced. Consequently, the implementation procedures require fewer resources and allow the diminution of business risks deriving from ERP implementation."*

2. MOTIVATION AND THE RESEARCH OBJECTIVE

Today, more than ever before, organizations and businesses expect effectiveness and quality of operation from their information systems and technology capabilities. These high expectations are usually fulfilled by the implementation of new, cutting-edge business technologies that are sometimes imported. Business technologies for enterprise resource operation or management known as ERP systems have became common, vital and crucial for survival and sustainability (Krumbholz, Galliers, Coulianos and Maiden, 2000).

The introduction of ERP systems to organizations involves adjustments known as localization and customization (Botta-Genoulaz and Millet, 2005). Localization refers to the addition of an ERP system with further functions and capabilities involved with adjustment to language, local and national regulations and basic business needs. Customization refers to the process where additional functions and capabilities are appended to the ERP system that is adjusted to operational needs derived from the way the organization is used to doing business. The higher the rate of localization and customization the greater the business risk involved with implementation of the ERP system (Botta-Genoulaz and Millet, 2005).

Since ERP system implementation is known to be a hazardous process with possible unexpected success (Poba-Nzaou, Raymond and Fabi, 2009) organizations try, as a strategy, to reduce the amount of localization and customization relying on the available functional capabilities already existent in the

system (Carlo, 2002). The market of ERP systems can be divided between large organizations and small-mid size organizations (Poba-Nzaou et al., 2009) that are referred to as SMEs. The ERP-SME market is considered to be different from the large organizational market as it is a field of research in itself, with particular trends and risks (Boersma and Kingma, 2009). Julien (1998) classifies uniqueness regarding SMEs, compared to large organizations, as having environmental uncertainty, dependency, centralization, specialization, strategy, systems, resources and flexibility. All of the mentioned factors are showing challenges to install new technologies, especially IT related systems.

IT culture could form a basis for non-customized and the non-localized attributes of the imported international off-the-shelf software packages. Localization and customization are issues that involve risk, affecting the organizational performance and operation of the ERP-SMEs.

If SMEs that implement ERP could identify issues, procedures and functions that could be attributed to IT culture then additional localization and customization would be irrelevant to those issues, thus reducing the risk involved with ERP-SME implementation and increasing pertinent success stories.

3. LITERATURE REVIEW

3.1. IT, ERP and culture

Information technology (IT) and culture are two different fields of research (Leidner and Kayworth, 2006). On one hand the term culture has many definitions commonly referring to norms and beliefs and is segmented to various streams such as business and national amongst others (van Everdingen and Waarts, 2003). IT, however, is an evolving field of research just as saturated as culture and has many sub-fields of interest, including that of enterprise systems known as enterprise system planning – ERP (Birbeck and Stewart, 2004; Botta-Genoulaz and Millet, 2004).

Attempts to find connections and correlations between culture and IT and supporting evidence that culture is a factor in the success or failure of IT, and in particular ERP projects, is partially summarized below.

Everdingen and Waarts (2003) and Birbeck and Stewart (2004) investigate the relationship between culture and technology focusing on IT, concluding that culture is a crucial factor for IT success. This conclusion is reinforced by Fui-Hoon Nah, Islam and Tan (2007) and by Agourram, Robson and Talet (2009) who focus on ERP systems and determine that culture is a crucial attribute needed for any IT project success including ERP-SMEs.

ERP-SME solutions are implemented in companies with different corporate and national cultures and there is growing evidence that failure to adapt ERP packages to fit these cultures leads to projects that are expensive and overdue (Krumbholz et al., 2000). While overcoming cultural attributes is considered to be a challenging procedure in the process of implementing new business technologies (Kuma, 2002; Amoako-Gyampah and Salam, 2004; Watanabe and Hobo, 2004; Yen and Sheu, 2004) in other ERP systems, Cline (2006) suggests that failure in IT such as ERP failure is also attributed to emerging risk due to culture.

Implementing an ERP system is a great challenge for any large or small company or organization (Boersma and Kingma, 2009) striving for IT/ERP success and needs to take into consideration the learning ability of the organization derived from the organizational culture. Conflicts related to culture can be moderated using learning techniques (Milliman, Taylor and Czaplewski 2009). In an attempt by Krumbholz et al. (2000) to predict the impact of culture on ERP package implementation, evidence was found regarding the connection to business culture but no evidence for national culture; furthermore, it has revealed that a mismatch between a small set of core values could be the break-even point for ERP success or failure. Strengthening the importance of culture, Prasad, Sharma and Godla (1999) argued that since implementing of ERP systems benefit from the “integrated” nature of the system as well as from the “reengineering” of the business practices and the entire “culture”, then this latter is one of the critical issues affecting ERP implementation.

Kaarst-Brown and Robey (1999) studied the ethnographic attitude towards IT, referring to it as a mysterious and unknown factor defining IT culture archetypal patterns that reflect different assumptions, concluding that organizations do not necessarily have unified symbolic meanings for IT.

Gargeya and Brady (2005) introduce quantified information, wherein cases lacking appropriate culture and organizational readiness failed in most organizations, in contrast to those succeeding in ERP implementation in the presence of appropriate culture and organizational readiness. In addition Lewis (2001) and Carlo (2002) summarize the failure rate for ERP systems and estimated it at between 66-70%.

Agrawal and Haleem (2005) suggest that both environmental pressures and cultural factors case study analysis in the US and India have a significant influence on growth in the usage of off-the-shelf/ERP packages (gross value), and growth in the usage of off-the-shelf/ERP packages (net value). In the same context of case studies G.Shanks analyzed an Australian and Chinese implementation of some ERP projects from the culture point of view. In this article numerous evidences for national culture effects on different phases of the implementation process were presented.

3.2. ERP-SMEs and virtual teams

ERP products normally are developed and are later used in international teams or communities. Consequently they carry a multi-cultural message of innovation, efficiency, effectiveness and, especially, gaining business advantages. These products are often imported from other nations.

In cases where this involves customization or localization reliance on IT culture might reduce the amount of adjustment needed resulting in diminishing the risk involved (Kern, 2003).

A study by Jarvenpaa and Leidner (1998) on communications and trust in global virtual teams finds fewer cultural effects than the researchers had expected. The insignificance of culture in predicting perceived levels of trust as well as the lack of individuating information exchange may be related to the fact that the respondents were of similar ages, functional backgrounds, and educational levels. Additionally, electronically facilitated communications may make cultural differences irrelevant: the lack of nonverbal cues eliminates evidence of cultural differences, such as variations in dressing, gesticulating, and greeting. Likewise, the written medium eliminates the effect of accents which would again reduce the salience of differences in cultural backgrounds. In addition, because the asynchronous mode gives individuals more time to process messages and respond, there might be fewer language errors, particularly among non-native speakers of the language used by the group, which would in turn reduce the salience of differences in cultural background. Hence, by making cultural differences less noticeable, electronic media may increase the perceived similarity among members.

In contrast to less relevant cultural differences using IT (Jarvenpaa and Leidner, 1998) its existence is creating the possibility of a global IT culture as regards trends and concepts.

3.3. ERP-SMEs IT culture and risk

Culture is blamed when something goes wrong, for example a failure in enterprise system implementation or an acquisition made by international group failing to impose its method of business on the subsidiary, and when no other failure factor can be found (Leidner and Kayworth, 2006).

Minimizing the risks in ERP projects could be achieved by issuing principles and specific practices in adopting ERP (Poba-Nzaou et al., 2009). The theory of information technology culture conflict introduced by Leidner (2008) concentrates on conflicts that could accrue in technology due to culture and does not apply to culture as a solution.

This paper tries to introduce IT culture in organizations, as a segment of IT, in order to mitigate the risk involved with ERP-SME implementation.

3.4. ERP and culture

Kees and Styze (2005), state that culture has not yet been a topic of explicit concern in studies of ERP, suggests that an implemented ERP system is considered a condition shaping the technological environment influencing organizational culture. Standardization of ERP systems is used to mediate between IT needs and constraints, ERP-standard software packages and between specific business domains of application. Regarding the presence of known and research critical success factors,

Sondoss, Assem, Rasmy and Rasmy (2008) studied the success of ERP implementation in Egyptian companies and claims that ERP implementation must not be hindered by organizational culture. In his results, they state that risk analysis must be conducted prior to ERP implementation and to evaluating the importance regarding an adequate business culture need for ERP success.

Ramaraj (2007) also analyzed the connection and effects of organizational culture and knowledge management in ERP implementation. He concludes that a set of factors relating to culture of knowledge sharing will lead to better and successful ERP implementations in the future.

3.5. Regulation, standardization and the use of the Internet as an evidence for IT culture

Niehaves, Klose and Becker (2006) constructed a model relating to the existence of governance in cases where ERP implementation is involved with consultants' hours. Bernroider (2008) however, argues that the value of ERP system is increased in the presence of IT governance[1], in cases where SOX[2] compliance or COBIT[3] adoption are present (Brown and Nasuti, 2005) More effective procedures regarding ERP implementation could be found and in the health-care industry when HIPAA[4] applies and there are requirements for maintaining privacy and security of patient medical records Pumphrey, Trimmer and Beachboard (2007) explore ERP as the best solution pending the existence of specific conditions. Supporting and strengthening all the above is Welch and Kordysh (2007) stating seven sets of best practices, of which the most relevant are:

1 Secure executive alignment for the broad-based ERP plan.
2 Establish the right governance model.
3 Managing IT infrastructure relentlessly, reinforcing regulation standardization and the way the is using and managing IT will have a direct affect on the success of ERP implementation.

The following simplified case-study is used to illustrate IT culture issues mentioned above:

3.6. Israel state comptroller's analysis regarding the presence of IT culture

Namer is the term given to the ERP project of medical center management in eleven state hospitals in Israel. The systems' objectives include effective usage of resources, service improvement for patients, availability of medical data, improvement end efficiency of procedure, integration, knowledge sharing, and the data flow of medical, logistics and financial information. The comptroller focused in evaluating the project cost and budget, exceeding the timetable, and the agreements with the software solutions. The audit concluded that (1) The project started in 1998 and should have concluded (according to time schedules and plans) in 2004 – a six-year delay; (2) A 38 million NIS ($ 7.6 million) budget exceeding was registered to the day of the audit; (3) Amounts paid to the solution provider were increased against the procedures.

The comptroller recommended that (1) since the ERP project involved high and complex technology surrounded by changes and adding's the project must be managed adequately and implemented with continuous controlling; (2) the budget should be managed adequately according to the state procurers; (3) control mechanisms should be developed and implemented; (4) adequate resources must be allocated to achieve knowledge preservation.

According to the comptroller the ERP project lacked a controlled environment, A Controlled environment might have been achieved if appropriate element and processes of corporate IT culture had been implemented as a preliminary step to the ERP project.

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1 IT governance is referred to the set of strategies policies and procedures used to manage IT in the organization (ISACA web site)

2 SOX refers to the Sarbanes Oxley Act, obliging traded organizations and subsidiaries of in the US stock market to adopted compliance programs regarding the effectiveness of controls

3 COBIT – The Control Objectives for Information and related Technology (COBIT) is a set of best practices (framework) for IT

4 HIPAA – Insurance portability and accountability act (HIPAA) of 1996, requires US Department of Health and Human services to adopt national standards for electronic healthcare transaction.

4. THE METHODOLOGY

4.1. Aims

The propose of the study is to evaluate evidence regarding the presence of unified regulation, standardization relating to IT, knowledge-sharing regarding the use of organizational systems and the extent of the use of Internet. This evidence was collected through structured interviews supported by a questionnaire.

4.2. Methods

A basic preliminary exploratory study was designed and conducted to validate the hypothesis. The study employed a semi-structured questionnaire intended for data collection from ERP-SMEs implementation by consultants who were experts in multinational, cross-cultural ERP-SMEs implementations. In addition basic information and relevant data regarding some of the relevant organizations was collected.

The questionnaire was completed by an interviewer and all data was gathered during the interview. The results were combined to a summary table (see Table 1). The questionnaire aimed to measure the following variables:

a) The existence and scope of IT culture.

   IT culture is measured by the existence of regulation, standardization, internationalization connected to IT and the organization's policy toward Internet usage of the organization's employee.

b) The amount of risk involved with the ERP-SME implementation.

Since the ERP-SME risk is subject to the extent of differences of the actual vs. planned implementation consulting hours in the ERP-SME implementation project, deviating from (exceeding) the planned vs. actual implementation hours indicates the existence of additional emerging risk.

5. THE RESEARCH FINDINGS

The following results obtained and analysis followed a conclusion data table. Due to the small sample the analysis concentrated using descriptive statistics. Analyzing results led to the following findings:

- In organizations where the existence of IT culture was identified (in more than three organizations) exceeding the planned vs. actual implementation hours was not found (in four cases).
  Exceeding the planned vs. actual implementation hours is a known risk in the field of project management. Exceeding hours might affect the success of the ERP implementation. Attempts should be made to minimize all risks related to the possibility of exceeding the hours .vs. planned.
- In other cases where the existence of an IT culture was not identified (in less than three organizations) exceeding the planned vs. actual implementation hours was found in three cases.
  In organizations that were identified as lacking regulation or standardization relating to IT, knowledge-sharing regarding the use of organizational systems, and the lack of use of Internet it was clear that additional effort was needed by all parties involved with the implementation, especially the ERP consultants. The effort was noticed and quantified according to the number of hours that were needed for the implementation. Since the number of hours is subject to additional factors and differs between organizations exceeding the planned vs. actual implementation hours as a percentage was taken into consideration.
- In one case no exceeding of the planned vs. actual implementation hours of or evidence for IT culture was found.
  Despite the fact that not exceeding the number of hours could not be attributed to a specific cause, not exceeding the number of hours could be ascribed to the existence of IT culture.

Organization									Details	Evidence for IT culture
I#	H#	G#	F#	E#	D#	C#	B#	A#		
No	Yes	No	No	No	No	No	Yes	Yes	SOX/ SOX-IT	International Regulations
Yes	No	No	No	No	Yes	Yes	No	Yes	HIPAA	
No	No	No	No	Yes	Yes	No	No	Yes	COBIT	International standards
No	No	No	No	No	No	No	No	Yes	ISO - 20000[5]	
Yes	No	No	Yes	Yes	No	No	No	Yes	Common Use of ERP/IT consultants	Knowledge sharing
Yes	No	No	No	Yes	Yes	No	No	Yes	Organizational portal	
No	No	Yes	Yes	No	No	No	No	Yes	Free internet	Internet usage
No	No	No	No	Yes	Yes	No	No	Yes	On the job training	
No	No	Yes	Yes	No	No	No	No	Yes	Paperless work	
3	1	2	3	4	4	1	1	9	Evidence for Existence of IT culture (count of parameters)	
B	B	B	B	A	A	A	A	A	Source	Information regarding SME-ERP project
200%	150%	120%	None	None	None	150%	None	None	Exceeding planned vs actual implementation hours	
IL	EU	EU	IL	IL	EU	IL	IL	IL	Country	
M	Y	Y	Y	X	X	X	X	X	Type of ERP system	

Table 1 – This table summarizes the data gathered from the consultants' questionnaire and reports during the interview.

6. CONCLUSIONS, PRACTICAL IMPLICATIONS AND LIMITATIONS

6.1. Conclusions

Our results suggest comparatively unexplored field of IT culture, it is it important to explore IT culture in context with the concepts mentioned above to mitigate risk factors that have emerged in ERP implementations

For the past five years in Israel and Europe an organization that relies on IT culture as a strategy, resulting from unified regulation, standardization, knowledge-sharing regarding the use of organizational systems and certainly the use of the Internet, the amount needed for ERP-SMEs systems adjustment (customization and localization) to an organization, is reduced in some cases. Consequently the implementation procedures require fewer resources and allow diminishing business risks deriving from ERP implementation.

It has been demonstrated that organizations that introduce regulation, standardization, and internationalization connected to IT and the organization's policy towards Internet usage by its employees affect the differences of the actual vs. planned implementation consulting hours in the ERP-SME implementation project thus affecting the emerging risk involved with the ERP-SME implementation.

[5] ISO 20000 - ISO 20000 (formerly known as BS15000 / BS 15000), is the world's first standard for IT service management. The standard specifies a set of inter-related management processes, and is based heavily upon the ITIL (IT Infrastructure Library) framework.

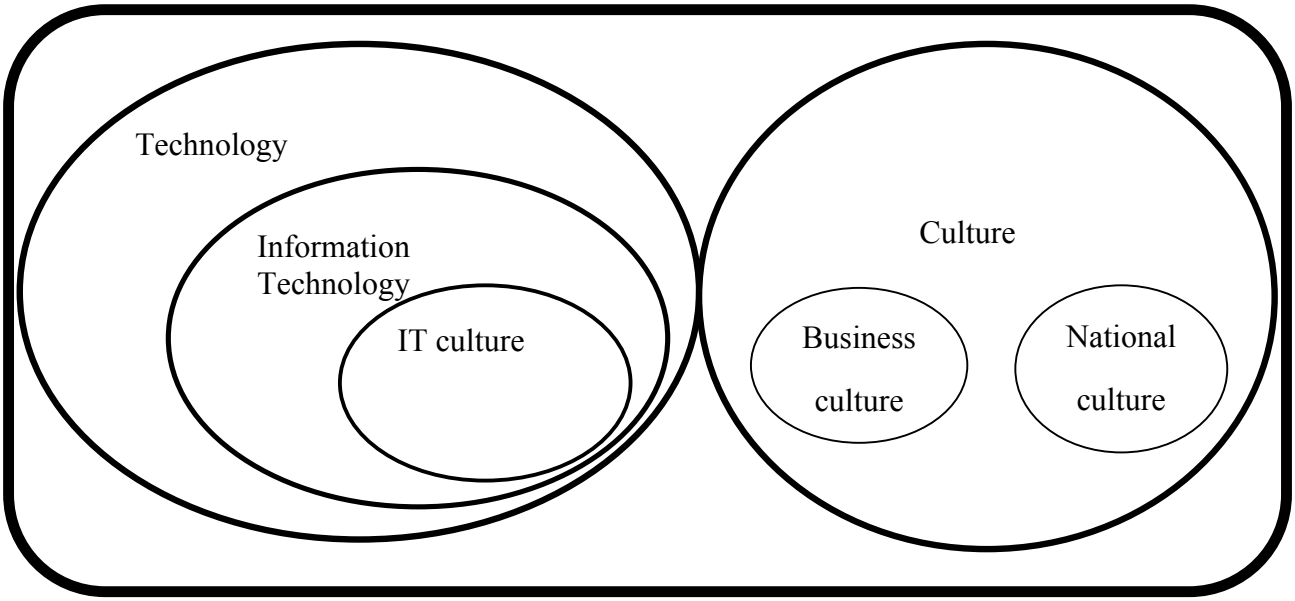

Figure1: This figure illustrates the positioning of IT culture among IT and culture

As noted, the concept of IT culture is a segment of IT.

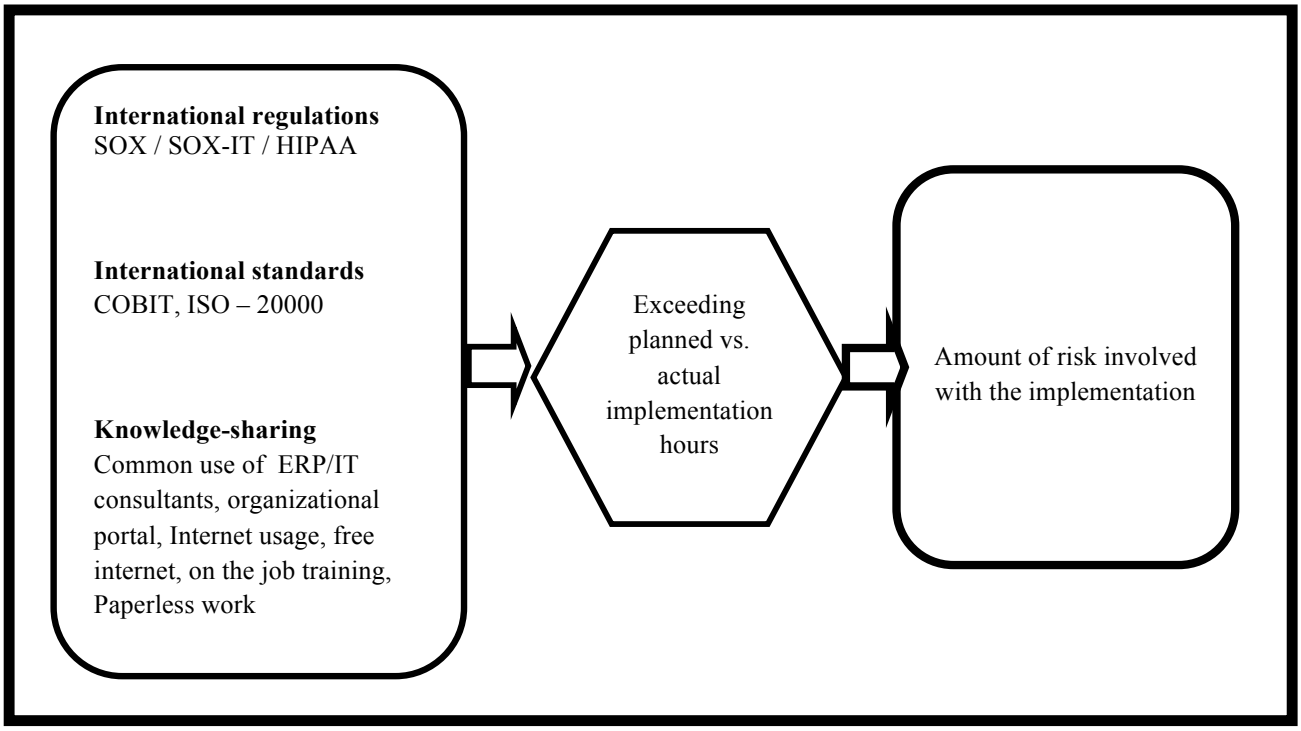

Figure 2 - This figure illustrates the connection and correlation of the variables noted.

6.2. Practical implications

SMEs implementing ERP might consider relying on their existent or future IT culture by promoting regulation, standardization, internationalization connected to IT and the organization's policy toward Internet usage by the organization's employee. Risk involved with ERP implementation could thus be mitigated.

6.3. The results of the preliminary study are subject to the following limitations:

The study is a preliminary study limited to two ERP solutions, and adopts a lean approach that will allow continuous study. The study did not take into consideration additional factors that could have an effect on the risks of the ERP-SME implementation. Notions regarding culture and IT were not fully analyzed and a narrow approach was adopted to link IT culture to ERP-SME risks.

6.4. Future research

It is suggested that future research can collect data from companies across multiple industries to investigate the similarities and dissimilarities across and between industries. The notion of IT culture in the context of this paper only referred to the existence and the increase of the unified regulation, standardization relating to IT, knowledge-sharing regarding the use of organizational systems and the extent use of Internet. Future research should also take into consideration additional components that could have been identified. It would be also interesting and useful to study companies in developing countries such as India and Brazil, etc.

REFERENCES

Agourram, H., Robson, B. and Talet, A.N. (2009). Culture does influence IS success perception. Defining information system success in France. International Journal of Enterprise Information Systems, 3(3), 66-69, 71-80

Agrawal, V.J. and Haleem, A. (2005). Environmental pressures, culture and factors contributing in the usage of various categories of application software. Global Journal of Flexible Systems Management, 6(2), 31-45.

Amoako-Gyampah, K. and Salam, A.F., (2004). An extension of the technology acceptance model in an ERP implementation environment. Information and Management 41 (6), 731–745.
Available at: www.advancedmanufacturing.com/May02/erpsoftware.htm

Bernroider, E.W.N. (2008). IT governance for enterprise resource planning supported by the DeLone-McLean model of information systems success. Information and Management, 45(5), 257.

Birbeck, P., and Stewart, G. (2004). Exploring the relationship between organizational culture and IT innovations in the context of extended enterprise systems. Australasian Conference on Information Systems (ACIS).

Boersma, K. and Kingma, S. (2009). Developing a cultural perspective on ERP. Business Process Management Journal, 11(2), 123-136.

Botta-Genoulaz, V. and Millet, P-A. (2005). A classification for better use of ERP systems. Computer in Industry 56,573-587.

Brown, W. and Nasuti, F. (2005). What ERP systems can tell us about Sarbanes-Oxley. Information Management and Computer Security 13 (4), 311.

Carlo, M. (2002). Enterprise software has to fit like a good suit. Advanced Manufacturing. www.advancedmanufacturing.com/May02/erpsoftware.htm

Fui-Hoon Nah, F., Islam, Z,. and Tan, M. (2007). Empirical assessment of factors influencing success of enterprise resource planning implementations. Journal of Database Management, vol. 18 (4), 26.

G. Shanks, A, Parr, B., Hu, B., and Corbitt Differences in critical success factors in ERP systems implementation in Australia and China: A cultural analysis. The University of Melbourne, Australia: Monash University.

Gargeya, V.B., and Brady, C. (2005). Success and failure factors of adopting SAP in ERP system implementation. Business Process Management Journal, 11(5), 501-516.

Israel State Comptroller report (2010). Available www.mevaker.gov.il

Jarvenpaa, S.L., and Leidner, D.E. (1998). Communication and trust in global virtual teams. Austin, Texas: The University of Texas at Austin Graduate School of Business.

Julien, P-A. (1998. Introduction. In P-A. Julien (Ed.), The state of the art in small business and entrepreneurship. Aldershot: Ashgate.

Kaarst-Brown, M.L., and Robey, D. (1999). Information technology and people. West Linn: vol. 12(2), 192-217.

Kees, B. and Sytze, K. (2005). Developing a cultural perspective on ERP. Business Process Management Journal, 11, 2

Kern, H. (2003). Understand behavioral culture of IT teams to help align with business goals. Change Tech Solutions Inc. http://articles.techrepublic.com.com/5100-10878_11-1060258.html

Krumbholz, M., Galliers, J., Coulianos, N., and Maiden, N.A.M. (2000). Implementing enterprise resource planning packages in different corporate and national cultures. Journal of Information Technology 15, 267–279.

Ramaraj, P. (2007). Organizational culture and knowledge management in ERP implementation: an emp. The Journal of Computer Information Systems, 48, 2.

Sondoss, E. S., Assem, A. El F.. Rasmy, T. and Rasmy, M. H. (2008). A quantitative model to predict the Egyptian ERP implementation success index. Business Process Management Journal Vol. 14 No. 3, 288-306.

Leidner, D.E., and Kayworth, T. (2006). A review of culture in information systems research: Towards a theory of information technology culture conflicts. MIS Quarterly, vol 30 (2),357-399.

Lewis, B. (2001). The 70-percent failure. InfoWorld.
Available at www.infoworld.com/articles/op/xml/01/10/29/011029opsurvival.html

Milliman, J., Taylor, S., and Czaplewski, A.J. (2002). Cross-cultural performance feedback in multinational enterprises: Opportunity for organizational learning. Human Resource Planning, 25(3), 29-43.

Niehaves, B., Klose, K., and Becker, J. (2006). Governance theory perspectives on IT consulting projects: The case of ERP implementation. E - Service Journal 5 (15).

Poba-Nzaou, P., Raymond, L., and Fabi, B. (2008). Adoption and risk of ERP systems in manufacturing SMEs: A positivist case study. Business Process Management Journal, 14(4), 530-550.

Pumphrey, L., Trimmer, K., and Beachboard, J. (2007). Enterprise resource planning systems and HIPAA compliance. Research in Healthcare Financial Management
11(1), 57.

Prasad, B., Sharma, M. K., and.Godla, J.K., (1999). Critical issues affecting an ERP implementation. Information Systems Managemen,, Summer 1999.

Watanabe, C., and Hobo, M. (2004). Creating a firm self-propagating function for advanced innovation-oriented projects: Lessons from ERP. Technovation 24 (6), 467–481.

Welch, J., and Kordysh, D. (2007). Seven keys to ERP success. Strategic Finance 89 (3): 40.

Yen, H.R., and Sheu, C. (2004). Aligning ERP implementation with competitive priorities of manufacturing firms: An exploratory study. International Journal of Production Economics 92 (3), 207–220.