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# A Meta-Analysis of Current Global Information Systems Research

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# A Meta-Analysis of Current Global Information Systems Research

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## ABSTRACT

Even though global information systems/technology research is a young stream of research, it is important to understand its current status. In this study, we have analyzed 53 global IT articles published from 1998 to 2003 in six leading IS journals. The main subjects, variables (independent and dependent variables), hypotheses, and findings were identified and analyzed. Some of the results show that Resource Management and IS Management Issues are the most studied subjects in global IT research, while subjects such as IT security and privacy, outsourcing, and organizational design have been somehow neglected. Interestingly, USA and Singapore are the most targeted countries for global information technology research.

A comprehensive framework consisting of national environmental factors and organizational environmental factors as independent; and system quality, information quality, service quality, information use, user satisfaction, individual impact, organizational impact, and national impact as dependent, is proposed for assisting global IT researchers.

## KEYWORDS

Global Information Systems Research, Hypotheses, MIS Journals, Meta Analysis.

## INTRODUCTION

Interestingly, the number of articles published on global IT has increased from 1991 to 2001, with the exception of 1996 (Palvia and Pinjani, 2004). In addition, global IT as a research subject was ranked 24<sup>th</sup> for the time period of 1993-1997; then it was ranked 12<sup>th</sup> for the period of 1998-2003 (Palvia et al., 2004).

Understanding the meaning of global information system is essential to realize the importance of it in today's changing business world. According to Palvia et al. (1992), a global information system is defined as a computerized system whose main objective is to support the business strategy of a multinational organization and interacts with components of international market as a single market and not as individual markets. In addition, they identified three main components of global IT: 1) information systems and technology that are global in scope; 2) information systems and technology in different cultures and countries; and 3) IT products and services that are built in one country and used in another country.

It is worthwhile to mention that previous meta-analyses in the area of global IT have mainly focused on the key issues in global IT, on research issues in global IT, and on the research methodologies that underline global IT research. Interestingly, although some frameworks, such as the one proposed by Ein-Dor et al. (1992), have been developed to assist global IT researchers, they still exhibit some shortcomings. Therefore, the objectives of this study are to analyze the existing literature related to global information systems and technology to identify the relevant variables, hypotheses, and findings; and to develop a comprehensive framework to assist research in the field of global IT.

## METHODOLOGY

Based on the findings of Palvia et al. (2004) and using the global IT concept as selection criteria, published articles in seven leading IS journals from 1998 to 2003 were screened to select those related to global IT. A total of 53 articles were identified to be associated with global IT. Articles were screened based on article title and abstract. Interestingly, *Management Science* does not have any article related to global IT for the time period 1998-2003. Table 1 lists the names of the selected journals

and the number of articles culled from each. In this study, we focus on the widely recognized top-tier journals. We realize there are at least three niche journals in global IT (*Journal of Global Information Technology Management*, *Journal of Global Information Management*, and *Electronic Journal for Information Systems in Developing Countries*); they are the focus of our research in ongoing and future research.

Journal Name	Number of Articles (1998-2003)
Communications of the ACM (CACM)	17
Decision Sciences (DS)	1
Information and Management (I&M)	23
Information Systems Research (ISR)	6
Journal of Management Information Systems (JMIS)	5
MIS Quarterly (MISQ)	1
Management Science (MS)	0
Total	53

**Table 1. MIS Journals Used in this Study**

An extensive meta-analysis was conducted. Each article was read and analyzed with the objective of identifying the subject of research, independent variables, dependent variables, intermediate variables, country of interest, hypotheses, and findings. Two first year Ph D. students, with knowledge in global IT, were responsible for coding each individual article. The coding scheme was discussed with a faculty advisor to improve consistency and inter-rater reliability. Regarding the classification scheme for the research subject, the Barki et al. (1993) classification scheme is the most commonly used. However, it is not up-to-date. Palvia et al. (2003) used the three top level of the Barki et al. (1993) scheme and modified it to accommodate new developments in IT. Consequently, for this study Palvia et al. (2003) extended classification scheme was used to classify the research subjects.

## RESULTS

### Subjects of Studies

Table 2 presents the results for the subjects of studies for global IT research. A total of 23 different subjects were identified.

Categories of Subjects	Frequency
Resource Management/IS Management Issues	12
Internet	8
IS Research	6
IS Usage	5
Decision Support Systems	5
IS Staffing	4
IS Implementation	4
IT Industry	4
Electronic Commerce/EDI	3
IS Development/Methods and Tools	3
IS Planning	3
IS Evaluation	2
Networks/Telecommunications	2
IS Education	2
Group Decision Support Systems/Global Decision Support Systems	2
Executive Information Systems	2
Internal/External Environment	1

Categories of Subjects	Frequency
Artificial Intelligence/Expert System/Neural Networks/Knowledge Management	1
IT Value	1
Supply Chain Management (SCM)	1
Media and Communications	1
End User Computing	1
Innovation	1
Total	74

**Table 2. List of Subjects of Studies for global IT research (1998-2003)**

### Countries of Studies

Table 3 shows the frequency and percentage of countries that have been subject of studies by global IT researchers. The countries are classified as: ADV - Advanced Country, NIC -Newly Industrialized Countries, and DEV - Developing Countries.

	Country	Percent		Country	Percent
ADV	U.S.	6.56%	NIC	Bulgaria	0.55%
ADV	Singapore	5.46%	NIC	Chile	0.55%
ADV	Australia	3.83%	DEV	Colombia	0.55%
ADV	Japan	3.83%	NIC	Czech Republic	0.55%
ADV	Canada	3.28%	DEV	Dominican Republic	0.55%
ADV	Hong Kong	3.28%	DEV	Egypt	0.55%
ADV	Taiwan	3.28%	NIC	Estonia	0.55%
ADV	United Kingdom	3.28%	ADV	Holland	0.55%
ADV	Germany	2.73%	DEV	Honduras	0.55%
DEV	India	2.73%	NIC	Hungary	0.55%
NIC	Korea	2.73%	DEV	Indonesia	0.55%
ADV	Sweden	2.73%	DEV	Iran	0.55%
DEV	China	2.19%	DEV	Iraq	0.55%
ADV	Netherlands	2.19%	ADV	Israel	0.55%
ADV	Denmark	1.64%	DEV	Jamaica	0.55%
ADV	Finland	1.64%	DEV	Jordan	0.55%
ADV	France	1.64%	DEV	Kazakhstan	0.55%
ADV	Italy	1.64%	ADV	Kuwait	0.55%
NIC	Malaysia	1.64%	ADV	Luxembourg	0.55%
ADV	Norway	1.64%	ADV	Macao	0.55%
ADV	Spain	1.64%	DEV	Malawi	0.55%
ADV	Switzerland	1.64%	NIC	Mexico	0.55%
ADV	United Arab Emirates	1.64%	ADV	New Zealand	0.55%
ADV	Austria	1.09%	DEV	Pakistan	0.55%
ADV	Bahrain	1.09%	DEV	Paraguay	0.55%

	Country	Percent		Country	Percent
ADV	Belgium	1.09%	DEV	Philippines	0.55%
NIC	Costa Rica	1.09%	ADV	Portugal	0.55%
DEV	Ecuador	1.09%	NIC	Russia	0.55%
ADV	Greece	1.09%	ADV	Slovenia	0.55%
DEV	Guatemala	1.09%	NIC	South Africa	0.55%
ADV	Ireland	1.09%	ADV	South Korea	0.55%
NIC	Oman	1.09%	DEV	Tanzania	0.55%
DEV	Peru	1.09%	NIC	Thailand	0.55%
NIC	Poland	1.09%	DEV	Turkey	0.55%
ADV	Qatar	1.09%	DEV	Ukraine	0.55%
NIC	Saudi Arabia	1.09%	DEV	Vietnam	0.55%
DEV	Venezuela	1.09%	DEV	Yemen	0.55%
NIC	Argentina	0.55%	DEV	Zimbabwe	0.55%
NIC	Brazil	0.55%	DEV		

**Table 3 Countries of Interest for Global IT Research (1998-2003)**

Table 4 displays the studies classified by the country’s level of economic development.

Type of country	GDP Range	Freq.	%
Advanced	>\$17,000	129	65%
Newly Industrialized	\$7,000-\$17,000	27	15%
Developing	<\$7,000	37	20%
Total		183	100%

**Table 4. Countries of Studies Classified by GDP per Capita.**

**Multiple and Single Country Studies**

Using the multiple vs. single country studies classification utilized by Ein-Dor et al. (1992), the targeted articles of this study were classified into multiple and single country studies (Table 5).

Single Country Studies	References of the articles used in the meta-analysis.
25	1,4,12,13,15,16,20,22,25,26,27,28,29,31,33,34,38, 9,41,44,45,46,47,49,50
Multiple Country Studies	References of the articles used in the meta-analysis.
26	2,3,5,6,7,8,9,10,11,17,18,19,21,23,24,30,32,35,36,37,40,42, 43,48,51

**Table 5. Multiple vs. Single Country Studies**

**Variables**

From the studied articles, we were able to identify 115 independent variables, 36 dependent variables and 15 intermediate variables. They are displayed in tables 6, 7 and 8 respectively. Note that each of the intermediate variables is already represented in the lists of independent and dependent variables or is considered irrelevant when taken out of context of the referenced study. In other words, some intermediate (moderating) variables are meaningless when they are taken out of their context (e.g.: their research model).

**National Environment**

<b>Variable</b>	<b>References of the articles used in the meta-analysis.</b>	<b>Variable</b>	<b>References of the articles used in the meta-analysis.</b>
<b><u>National Culture</u></b>		<b><u>Economic Factors cont.</u></b>	
Availability	31	Market Structure	21
Censure	31	Market Value	42
Computer Usage outside school	46	non-IT Capital per Worker	7
Cultural background	46	Number of ISP's	38
Cultural Environment	11	Per Capita GNP	10
Demographics	11		
Ethical Predisposition	11	<b><u>Political/Regulatory/Legal Factors</u></b>	
Ethnic Origin	5	Political Regulatory	35
Female role model	46	Public/private partnerships	38
Heterogeneous adopters	38	Subsidy	30
Manifest conflict	51	Entry Barriers	21
National Culture	43,35,40		
Nationality	37	<b><u>IS Human Resources</u></b>	
Oral Communication Preference	6	Number of IT Workers	7
Referent Power	6		
Risk Propensity	17	<b><u>Organizational Environment</u></b>	
Standard setting	30		
Technological Innovation	38	<b><u>User/Individual Characteristics</u></b>	
User venting/participation	51	Changes associated with the use of IT systems (skill, knowledge, work, performance, and interaction with peers, superiors, and users)	29
		Individual and team experiences	
		With technology	29
		Position in the organization	28
		User Age	28
		User Gender	26,28
		Years at Current Position	28
		Years of Computer	
		Experience/Computer literacy	26,6
		<b><u>Managerial Commitment</u></b>	
		Endorsement by Top Management	6
		Level of Sunk Cost	17
<b><u>Economic Factors</u></b>			
Commercial use of the internet	38		
Communication medium	43		
Communication network cost	44		
Competitive intensity	20		
Competitive Success Factors	21		
Cost	31		
Degree of competition in basic Services	44		
Entry Barriers	21		
Growth	47		
Level of Economic Development of the country (GDP)	35		
Market Integration	19		

		Managerial commitment	29,33
<b><u>IT/IS Characteristics</u></b>		<b><u>Type of Industry</u></b>	
Ease of Use	28	Industry Type	47,40
Employee Productivity	47	Illustrative Computer Industry	
Freshness of information	37	Sectors	21
Information Format	28	Subsidiary Location Industry	47
Information Timeliness	28		
IS Accuracy	28	<b><u>IT Investment</u></b>	
IS Content	28	Capital Invested in Subsidiary by	
Number of available links to other Sites	37	Parent Firm	47
Number of available pages	37	Impact of the internet investment	37
Organization of the web sites	37	IT investment	13,42
Origin of Information	41		
Perceived Attractiveness	45	<b><u>Global Organization Strategies</u></b>	
Perceived Benefits/ Perceived Ease of Use	41,45	Centralization	19
Perceived Enjoyment	45	Determinateness of Location	21
Perceived Usefulness	45	Global Organizational Strategies	37
Source of Information	41	IT implementation strategy and	
Source of Soft Information	41	Schedule / Internet strategy of the firm	29,33,37
Speed of the site	37	Strategic Alliances	19
Traffic of the site	37	Value Chain Configuration	19
Type of Information	41	Value Chain Coordination	19
Types of Users	41		
User involvement	29,33	<b><u>Organizational Culture</u></b>	
User Training	29,33	Business Relationships	27
Website Age	20	Experiential Knowledge	32
		Informational Knowledge	32
		Innovation directive	30
<b><u>Firm Characteristics</u></b>		Knowledge building	30
Assets Size	13	Knowledge Deployment	30
Basic parameters of the firm	37	Methodology for acquire tools	29
Company Size (Number of Employees)	47,13,18	Organizational Environment	11
Firm Age	20	Perceived important of IS skills	26
Firm Characteristics	21	Prior Competencies	20
Firm size	20	Subsidiary Type (Related, Unrelated)	47
Firm Type	35	Willingness to support emerging Technologies	26
Revenues	47,13,18		
Sectoral identity	37		

**Table 6. Independent Variables**

<b><u>System Quality</u></b>		<b><u>Organizational Impact</u></b>	
Website Content and Design	40	Adaptive Performance	32
Website Development	20	Benefits for e-commerce	27
		Company Success	47
		EIS Success	41
<b><u>Information Quality</u></b>		GIS Implementation Success	33
Information content	5	Organizational Structure	18,19
Relevance	5	Implementation Success of IT in LDC	
Transformational content	5	(less developed country)	29
		Return on Asset (ROA)	42
<b><u>Use/Intention to Use</u></b>		Return on Equity (ROE)	42
Adoption of IT	30	Return on Sales (ROS)	42
Internet Adoption	44	Total Shareholder Return (TSR)	42
Internet Growth Rate	38	Type of IT Management Issue	35
Purpose of internet use	5	Willingness to Continue a Project	17
Attitudes toward the use of IS/IT	13,26	Status of IS practice	13
<b><u>User Satisfaction</u></b>		<b><u>National Impact</u></b>	
Acceptance of GSS	6	Change in GDP per Worker	7
Actual Use	45	Increasing/Decreasing Returns	21
End-User Computing Satisfaction	51,28	Number of Women in the IT field	46
		Organizational Status Influence Effect	43
<b><u>Individual Impact</u></b>		Software Piracy Rate	10,31
Confusion	5		
Entertainment	5	<b><u>IT Projects</u></b>	
Ethical Behavior	11	Systems development policies and	
User emotional hostility	51	Procedures	29
User substantive dissension	51		

**Table 7. Dependent Variables**



<b>Variable Name</b>	<b>References of articles used in meta-analysis.</b>
Age	51
Attitude towards Use	45
Company Size	42,40
Ethical Intentions	11
Intention to Use	45
IS Department Size	26
Level of Education	51
Marketing Implementation Capabilities	32
Marketing Planning Capabilities	32
Risk Perception	17
Strategic commitment	20
Type of Industry/Industrial Sector	42,51
Type of Organization	26,40
Years at Current Position	51
Years of Computer Experience	51

**Table 8. Moderating Variables**

### Hypotheses and Findings

From the analyzed articles a total of 102 hypotheses were identified. Appendix B <sup>1</sup>presents the hypotheses and their results (supported or rejected). Table 9 shows some examples of the coded hypotheses. It is important to state that for those articles which utilize a commentary methodology, only the main findings were identified. The findings are reported in Appendix C<sup>1</sup>.

<b>Hypothesis</b>	<b>References of the articles used in the meta-analysis.</b>	<b>Result</b>
H1: The performance of related subsidiaries will be superior to that of unrelated subsidiaries	47	Supported
H41: Global firms exhibit level of planning activities that do other types of MNCs	18	Supported
H38: GSS are not easily accepted in situation where issues of referent power are abundant	6	Supported
H30: Developing countries rank operational issues, such as technology infrastructure, quality/reliability and human resource issues most important	35	Supported

**Table 9: A Representative Sample of Coded Hypotheses**

<sup>1</sup> Because of space limitations, the appendices were not included.

## PROPOSED FRAMEWORK

Using the global IT concept as a reference and the findings of this study, it is easy to understand that the existing frameworks for global IT have some shortcomings. For instance, one of the most comprehensive proposed frameworks of global IT research is the one proposed by Ein-Dor et al. (1992). The framework includes three main groups of variables: national culture, environmental, and structural. Some of the shortcomings of Ein-Dor et al. (1992) framework are the following:

1. It includes neither the political aspects nor the legal ones. This is a shortcoming of the framework, because organizations need to fulfill every legal aspect in the country, where they are doing businesses; and, of course, their information systems need to consider those legal aspects as well.
2. It does not explain the relationship that exists between global intra-organizational systems and the impact that national culture might have on them.
3. The framework does not explain how the level of IT adoption of a country might impact the design, development, and implementation of a global IS.
4. It does not explain which independent variables, aside from national cultural, affect the success of global IT.

Some more specific global IT frameworks have been developed. For instance, Palvia et al. (2002) developed a framework to explain the impact of environmental factors, such as level of economic development of country, political/regulatory, and cultural issues along with global organizational strategies and type of firm, on the key IT management issues. In addition, Nasirin and Birks (2003) created a framework to explain the different factors that affect the implementation of global information systems. They identified as internal forces, factors such as senior management support, resistance to change, training process, and so on. However, there is not a comprehensive framework for global IT research.

In using the Ein-Dor framework to classify the coded independent variables, we realized that such framework lacks of constructs to represent the political and legal regulatory factors; therefore, construct representing the political, legal and regulatory factors of a nation were added. Interestingly, those constructs were identified by Palvia et al. (2002). We also found it necessary to add constructs specifying the characteristics of the firm, of the system and of the users.

Using the results of the meta-analysis a comprehensive framework for global IT research is proposed. As was mentioned above, the dependent variables were classified using DeLone and McLean (2003) framework. It is important to mention that the collected variables did not reflect any use of the *service quality*, and the *intention to use* construct was only represented by one variable. National impact emerged as a new construct from the analyzed articles. The description for each of the dependent constructs of the proposed framework follows.

### Dependent Constructs

1. *System Quality*: Refers to the quality of the information processing system itself. Some examples are flexibility of the system, response time, resource utilization, ease of use, etc. (DeLone and McLean, 1992)
2. *Information Quality*: Can be defined as the quality of the output of the information system. However, some of the measures of the information quality are subjective because they depend on the user perceptions (DeLone and McLean, 1992).
3. *Service Quality*: Refers to the characteristics of the rendered service. It includes assurance, responsiveness, and empathy (DeLone and McLean, 2003).
4. *Intention to Use/Use*: Use refers to the system actual use; however, it is very broad and subjective to the user. It is noteworthy to mention that information use is only relevant when the information systems are used in a voluntary way (DeLone and McLean, 2003).
5. *User Satisfaction*: Can be defined as the extent to which the information system satisfied the users' needs and expectations. Interestingly, it is the most widely used single measure of IS success (DeLone and McLean, 1992).
6. *Individual Impact*: Refers to the effect that the information systems may have on the behavior of the recipient. Some examples include efficient decisions, time taken to complete a task, decision quality, task performance, etc. (DeLone and McLean, 1992).
7. *Organizational Impact*: Can be defined as the extent to which information systems affect the organizational performance. For instance, cost reduction, organizational effectiveness, profit performance, etc. (DeLone and McLean, 1992).
8. *National Impact*: Relates to how IT/IS may have an impact on the national environment. Some examples include increase GNP per worker, change in GDP per worker, productivity growth, fewer number of employs, and increase quality of living.

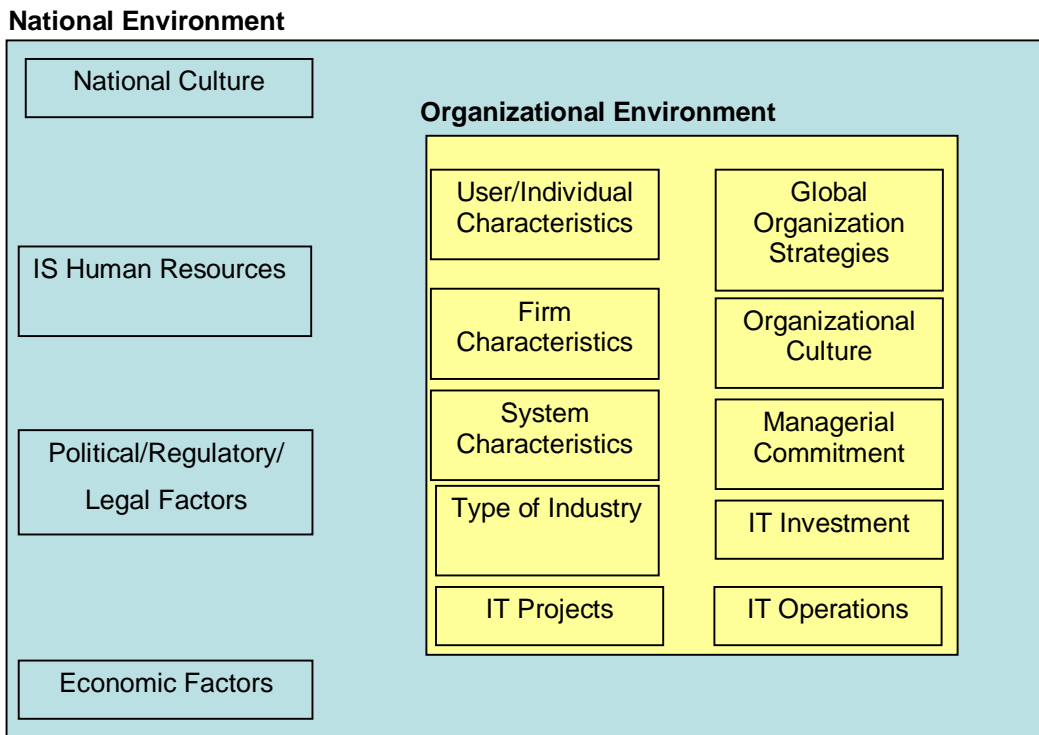
Regarding the independent variables of the proposed framework, two main groups of independent variables were identified from the results of the meta-research: national environment and organizational environment (Figure 1). The independent constructs are defined below.

**National Environment**

1. *National Culture*: The totality of socially transmitted behavior patterns, arts, beliefs, institutions, and all other products of human work and thought characteristic of a community or population within a national context. (Ein-Dor et al., 1993)
2. *Economic Factors*: National financial concerns impacting the development of and use of IS, but are not an integral part of the system. e.g. per capita GNP or communication network access cost.(Ein-Dor et al., 1993)
3. *Political/Regulatory/Legal Factors*: The political governance philosophy of the nation in question, the enactment and enforcement of standards, technology investment tariffs etc. (Palvia et al., 2002)
4. *IS Human Resources*: It refers to the availability of qualified IS professional in a specific country. In this regard, IT professionals are mobile and world demand and market circumstances give some nations advantages in recruiting IT professionals (West and Bogumil, 2001; Montealegre, 1998).

**Organizational Environment**

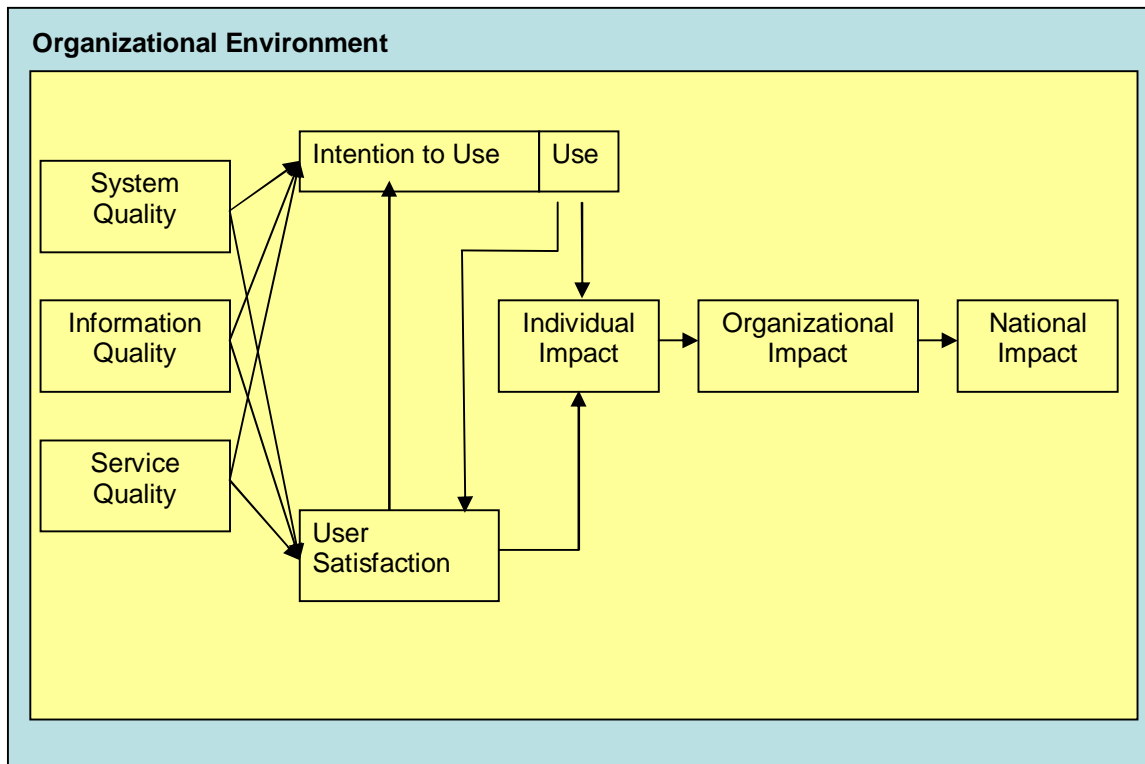
1. *Type of Industry*: Refers to the sector of industry that a given organization is engaged in, such as Service, Manufacturing, or Sales. (Palvia et al., 2002)
2. *IT investment*: Refers to the level of investment on IT resources. In this regard, some studies have shown that level of IT investment is highly correlated with the level of business performance (Tam, 1998; Dewan and Kraemer, 1998).
3. *Global Organization*: Refers to the global organizational strategy of the firm, such as Multinational and International. Refers to the relationship between top firm management and subsidiary organizations. (Palvia et al., 2002)
4. *Organizational Culture*: The totality of socially transmitted behavior patterns, arts, beliefs, institutions, and all other products of human work and thought characteristic of a community or population within an organizational context. (Ein-Dor et al., 1993)
5. *Managerial Commitment*: Refers to the extent to which top management provides support to IS projects and/or initiatives. Studies have shown that management support is a key success factor for information system implementation and adoption (De Vreede, et al., 1998).
6. *Firm Characteristics*: Such attributes as firm’s size, firm’s assets and other basic parameters of the firm.
7. *Individual User Characteristics*: Basic parameters of the individual users of a system. These include such attributes as gender, ethnicity, training, experience etc.
8. *System Characteristics*: Refers to the basic parameters of a system such as accuracy, content, ease of use, information format etc.
9. *IT Projects*: Characteristics of the IT projects undertaken by the organization
10. *IT Operations*: Characteristics of the day to day IT operations carried out by the organization.



**Figure 1. Proposed Framework of Independent Variables**

Based on the hypotheses and findings resulting from the meta-analysis, the Ein Dor et al. (1992) framework, and the DeLone and McLean (1992; 2003) framework, the proposed framework is presented in Figure 2. To simplify the view, the detail of the National and Organizational Environmental constructs have been removed. After viewing the proposed framework, it may be instructive to review the categorized variables in tables 7, 8 and 9.

**National Environment**



**Figure 2: Proposed Framework**

**DISCUSSION**

**Subjects of Studies**

MIS research has been characterized by being very fragmented (Benbasat and Weber, 1996) and the same seems to occur in the global IT research. As can be seen in Table 3, there is not a clear stream of research defined for global IT research.

A noteworthy point is that resource management and IS management issues are at the top of the subjects list. This finding is consistent with existing U.S. literature of key IT issues (Luftman and Mclean, 2004). The Internet is in second place, followed by IS research, IS Usage, and decision support systems. However, subjects such as Organizational Design/BPR, Software/Programming Languages, IT Security & IT Privacy, Databases/DBMS, ERP, Theory of MIS, Hardware, Multimedia, and CRM have been neglected by the global IT researchers between 1998 and 2003. Moreover, as it was mentioned earlier, research subjects related to the constructs of *service quality and intention to use* were only represented by one variable. In this context, as IT outsourcing trend continues, more research related to the various factors that may affect the quality of services across cultures is needed.

A possible explanation for the lack of research representation in some areas of global IT may be the fact that niche journals have been created to cover such specific areas, but they were not included in this study.

**Countries of Interest**

A total of 77 countries have been subject of studies for global IT; however, USA, with about 7%, is at the top of the list. A possible explanation is that USA is mostly used in studies that are cross-culture comparisons. Interestingly, Singapore is at

the second place, with about 5%, and Australia and Japan are at the third place with about 4 % (Table 5). For this study the 2003 GDP per capita was used to classify the countries into Advanced Country, Industrialized Country, and Developing Country. Not surprisingly, advanced countries have been the main target of studies for global IT research. This phenomenon may be explained by the fact that global IT is first introduced at the headquarters of global companies, which are mainly established in advanced country, and then is slowly introduced to the subsidiaries.

### Multiple and Single Country Studies

Interestingly, the distribution among single and multiple country studies appears to be very even. In this context, most of the single country studies are concerned with the introduction or adoption of new information technologies/information systems by a particular country. On the other hand, most of the multiple country studies are related to cross-cultural issues and global IT strategies.

### Variables

In order to classify the independent variables, the Ein-Dor (1992) Framework was extended to include the User/Individual Characteristics, Firm Characteristics, and IT/IS Characteristics constructs. The independent variables are classified according to the constructs in the extended framework.

In order to organize the dependent variables, the DeLone and McLean (1992, 2003) framework of dependent variables was used. The DeLone and McLean (1992) framework contains constructs that describe Individual Impact and Organizational Impact. Based on the identified variables, the *national impact* construct was added to capture the broader context often studied in global IT research.

### Hypotheses/Findings

Some important insights of the hypotheses and findings are discussed as follows.

#### *Organizational Structure*

Global organizational structures and strategies have a direct impact on the global firm performance and success. For instance, the performance of related subsidiaries is superior that the performance of unrelated subsidiaries [47]<sup>2</sup>. In addition, global companies seem to outperform transnational and multinational companies in the aspects of planning, controlling, information systems integration, IT standardization, and user training [18].

#### *Cultural Issues*

Cultural differences may introduce additional problems to the implementation and adoption of IS/IT. In this regard, USA and Singapore have different values for the power distance dimension. Therefore, the organizational status influence will be higher in Singapore than in USA. As a result, IS/IT that challenge the power of individuals will be more likely to be rejected at Singapore than at USA [43].

#### *Level of Economic Development*

The kinds of IT issues vary accordingly to the country's level of economic development. Previous studies show that advanced countries rank strategic business relationship issues, such as strategic planning, IT alignment, data resources most important, while developing countries rank operational issues, such as technology infrastructure, quality/reliability, and human resource issues most important [35]. In addition, the top three international information systems issues rated by the foreign affiliates were (#1) IT infrastructure, (#2) information architecture, and (#3) communication networks [23].

## CONCLUSIONS

Some areas have been the focus of global IT research while other important areas have been neglected. It is clear that more attention is needed toward the areas of service quality, intention to use technology, organizational design/BPR, software/programming languages, IT security & IT privacy, databases/DBMS, ERP issues, hardware, multimedia, and CRM. In addition, it is important that global IT researchers concentrate their research efforts toward understanding and resolving global IT issues in the environment of newly industrialized and developing countries.

There is not a standard dependent variable for measuring success of global IT. As DeLone and McLean (1992) stated: a consensus among IS researchers about the MIS success measurements (the dependent variable) is essential for building a base of MIS cumulative and verifiable knowledge. In the present study the dependent variables were classified in nine

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<sup>2</sup> References that follow the format of [#] correspond to the articles used in the meta-analysis. Because of space limitations, the complete references of the articles used in the meta-analysis were not included.

categories information quality, system quality, service quality, use, user satisfaction, intention to use, individual impact, organizational impact, and national impact.

Finally, the proposed framework is a comprehensive one that will assist IS researchers in understanding the different factors that may affect the success of global firms and global IT. Even though a total of 77 different countries were subject of interest among the 53 analyzed articles. One limitation of this study is that it only incorporated U.S. based journals. Therefore, to validate the framework even further, it is necessary that future research includes non-U.S. based journals as well as global IT research focused journals.

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*Because of space limitations, please contact the authors for complete references of the articles used in the meta-analysis and Appendices.*