INFORMATION TECHNOLOGY INFRASTRUCTURE CAPABILITY'S IMPACT ON FIRM FINANCIAL PERFORMANCE: AN EXPLORATORY STUDY

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ABSTRACT

This paper explores the relationship between information technology infrastructure capabilities and firm performance. Return on sales is utilized as the measure of firm performance, due to its ability to indicate a firm's competitive advantage and resource/competitive flexibility. Utilizing existing measures an instrument was used which addressed the multiple dimensions of IT infrastructure. Eight factors were found to significantly effect return on sales. Modularity, technical specialty knowledge, support activity efficiency, and resource acquisition functionality positively effected firm performance. While primary activity efficiency, resource management functionality, threat and premptiveness positively effected firm performance. Empirical evidence is provided and theoretical explanations are explored. Finally, limitations of the study as well as future research are discussed.

INTRODUCTION

Each year corporations spend billions of dollars on information technology (IT) in hopes of attaining competitive advantage or to minimize the advantage achieved by their competitors (23, 30). A major portion of these expenditures has been devoted to the development of an IT Infrastructure (ITI), which has been seen as a key differentiator in the competitive performance of firms (30). As a differentiator ITI has received increased attention of Information Systems (IS) management (25, 32, 34).

A recent McKinsey & Company report revealed that companies that are "IT experts" have a return on sales of 4.7% per year compared to 1.8% for companies that are not, revenue growth of 7.6% per year compared to 4.9% for those that are not. These companies have also seen their market share grow 4.8% as opposed to a decline of 4% for those that are not "IT Experts." This study also found that the experts received 76% of their orders through EDI or the Internet, while the others received 44%. The experts also had inventory levels of 2.7% of sales compared to 5.8% for the others (24). These numbers are indicative of the importance of IT in the organization.

Reinforcing the importance of IT to the organization, recent surveys of top executives have indicated the importance and increased attention that IT managers are placing on ITI (5, 28, 32). With the increased attention there is a need for an organization's ITI to remain flexible while reinforcing the areas that produce competitive advantage. In today's competitive environment, either aspect without the other could be detrimental to the long term success of the organization. With the plethora of new technologies and services available, corporations must invest wisely in the "right" areas, while still remaining focused on the bottom line performance. Many scholars have argued that the returns that IT provides an organization go well beyond the bottom line (8). In an increasingly global economy no one would argue that one of the primary concerns of any organization is an adequate IT infrastructure.

ITI is a multidimensional construct which is comprised of both technical (hardware, software, configuration, etc.) as well as personal criteria (10, 21). This paper utilizes existing studies in creating measurable dimensions of ITI. Utilizing these dimensions, a survey is analyzed which reveals a connection between ITI and corporate return on sales (ROS). This study offers insights into which ITI aspects impact corporate ROS.

This paper begins by outlining a view of competitive advantage that is appropriate for the analysis of a construct such as ITI. A review of the appropriate literature in creating our construct is then completed. Next, a statistical analysis will be presented from 80 firms which were surveyed and the results will be presented. Finally, study limitations and future research implications will be discussed.

THEORETICAL FRAMEWORK

The resource-based theory of competitive advantage (2, 3, 19, 31, 37) provides insights into many of the issues relevant to ITI. Resource-based theory purports that industry structure does not necessarily lead to competitive advantage, but a firm's ability to capitalize and implement internal resources in dynamic environments. The theory further proposes that firms are comprised of "bundles" of resources and the accumulation of resources that may be unique or difficult to accumulate, that enabling firms to take advantage of opportunities or fend off threats.

Miller and Shamsie (31) establish that two categories of resource-based theory exist and can be utilized for different competitive environments. The property-based resources are applicable in stable predictable environments while the knowledge-based resources are best suited for changing and unpredictable environments. Both of these dimensions are critical in understanding the impact of ITI on corporate performance and our measure must accommodate both property- and knowledge-based dimensions.

The use of information as an element of corporate strategy is not new and has been seen often in the literature (15, 20, 36). Turban, McLean, and Wetherbe (38) defined IT as the physical facilities, the services, and the management that support all computing resources in an organization. They further stated that IT should support all the organization's IT applications including operation, documentation, integration, and maintenance.

In most business settings, strategic information

management has become a necessity due to changing operating environments, shorter life cycles, and increased complexity of the changes (14). Brancheau, Janz, and Wetherbe (9) reviewed the key issues in MIS and found that the item of most interest to participants was building a responsive IT. They recognized that "an IT should support existing applications while remaining responsive to change, as this is the key to long-term enterprise productivity" (p. 229). This supports both dimensions of the resource based view.

Duncan (16) described an IT infrastructure as a shared set of tangible resources (e.g., platform technologies, telecommunications) that provide a foundation to enable present and future business applications. Weill (41) utilized the foundation offered by McKay and Brockway (29), Turnbull (39), and Keen (23), as well as his own empirically observed characteristics to define an IT. He stated that an IT is "the base foundation of IT capability budgeted for and provided by the information system function and shared across multiple business units or functional areas. The IT capability includes both the technical and managerial expertise to provide reliable service" (p. 553).

Placing ITI in a more universal context, ITI is comprised of bundles of resources which are accumulated over time. The time variable creates unique attributes within organizations that can be much different from organizations which utilize similar technologies. Because ITI possesses elements which are unique to a particular organization, ITI can also be very difficult to duplicate.

The ability of the firm to create a unique resource, in this case an ITI, the greater the competitive advantage a firm will achieve (1). If a firm is able to achieve competitive advantage then it will be able to achieve a greater ROS.

In order to adequately address the impact of ITI on organizational performance the three dimensions (property, resource and competitive advantage) that have been discussed must be addressed. An ITI must have the proper physical elements (hardware, etc.) as well and the proper knowledge (personnel, etc.) and these resources must be used in ways that produce competitive advantage in order to have an impact on firm performance. The following section will outline how each of these dimensions were addressed based on previous research.

RESEARCH METHOD

ITI Dimensions

The three dimensions of organizational performance are examined utilizing the work of three principal studies; the development of the ITI flexibility construct (40), critical skills and knowledge requirements of IS professionals (26), and the development of measures to assess the extent to which an information technology application provides competitive advantage (CAPITA) (35).

Compatibility/Connectivity (COM) and Modularity (MOD). Turner's (40) research explored the dimensions contained within the ITI construct. The data utilized in his study were obtained from 207 companies representing many of the major business segments (e.g., manufacturing, insurance, health services, retail, financial). This study resulted in the identification of two primary components that of computer compatibility and connectivity, and application modularity. The parameters of these two dimensions have been previously explored in other studies (Table 1). The concepts of these dimensions originate from the works of Duncan (16) and Keen (23).

TABLE 1
Comparison of ITI Frameworks

Gibson (1993)	Davenport & Linder (1994)	Broadbent, et al., 1996	Duncan, 1995	Lee, Trauth, & Farwell, 1995	Turner, 1999	Current Study
Data Transparency	Business Information	Data Management	Data		Connectivity	Compatibility
Computer Compatibility	Technical Functionality	Standards Management	Applications		Compatibility	
Application Functionality	Business Applications	Application Management	Platform		Application Functionality	Connectivity
Communications Connectivity	Core Technologies	Communications Management	Network Telecomm		Data Management	
IT Organization & Control		Education Management		Technical Specialty Skills	Technical Skills	Technical Specialty Knowledge
	Business Process Support	Services Management		Inter-personal Skills	Boundary Skills	Interpersonal & Management Knowledge
				Business Functional Skills	Functional Skills	Business Functional Knowledge
		IT R&D		Technology Management	Technology Management	Technical Management Knowledge

For this study, the concept of computer compatibility and connectivity is defined as the level of consistency found in the IT infrastructure throughout the organization. Gibson (18) offered the dimension of compatibility to address the need of uniformity in technology across the organization. Broadbent, et al.'s (11) component of standards management is comparable to the dimension of compatibility, as the authors defined standards management as the development and enforcement of IT architectures.

The dimension of connectivity is described as the physical presence of information technology that binds the organization together (e.g. ATM, routers, fiber) (17, 23, 33). Keen (23)

suggested the term "reach," to address the issue of connectivity. He defined reach as the locations that can be connected via the IT infrastructure. Keen (23) also noted that reach is required to achieve an organization's desired level of data transparency.

The concept of modularity for this study focuses on the term "maneuverability," synonymous to flexibility, to describe the ability of IT to be both pro-active and reactive to changes in the business environment. It is defined as the dimensions of maneuverability as maintainability, scalability, adaptability, portability, openness of systems, autonomy of systems, accessibility of data, inter-operability, and appliance connectivity (6, 7).

Technical Specialty Knowledge/Skills (TSK), Technical Management Knowledge/Skills (TMK), Interpersonal & Management Knowledge/Skills (IMS), and Business Functional Knowledge/Skills (BKF). These dimensions are based on the four broad categories developed by Lee, Trauth, and Farwell (26). Based on their definitions, Technical Specialty Knowledge focuses on the IS technical specialties (e.g., programming languages, operating systems, hardware, telecommunications, etc.). Technical Management Knowledge focuses on where and how to deploy information technology. Interpersonal & Management Knowledge focuses on the boundary spanning role. Winslow and Caldwell (42) and Maglitta (27) suggested that boundary spanning skills, the ability to assume roles outside their area of training or original competencies, may enhance the performance of the firm. Business Functional Knowledge focuses the emphasis on making IT meet business goals.

Primary Activity Efficiency (PAE), Support Activity Efficiency (SAE), Resource Management Functionality (RMF), Resource Acquisition Functionality (RAF), Threat (THR), Preemptiveness (PRE), and Synergy (SYN). Sethi and King (35) addressed the firm's intangible and complementary resources when they operationalized the CAPITA construct. This construct measures the existing level of competitive advantage present within an organization provided by an IT application. CAPITA includes the dimensions of:

1. primary activity efficiency (e.g., cost of transforming inputs to outputs);
2. support activity efficiency (e.g., coordination and development);
3. management functionality (e.g., selection, upgrade of resources);
4. acquisition functionality (e.g., accessibility of resources);
5. threat (e.g., switching cost);
6. preemptiveness (e.g., first movers, unique parameters);
7. synergy (e.g., innovation ability).

The CAPITA construct has been previously tested for unidimensionality, convergent, discriminate, and predictive validity, as well as for reliability (35). To account for the organization wide aspects of ITI the questions were adjusted to fit ITI concepts. A complete listing of the items in each dimension can be found in Appendix A.

Firm Performance

The dependent variable of interest in this study is financial performance. Net income divided by net sales (profit margin, return on sales or ROS), drawn from COMPUSTAT, served as a proxy of financial performance. We chose ROS because it has been shown to be a measure of a firm's competitive advantage and resource/competitive flexibility (22), which is one of the three dimensions of interest. This measure was then standardized by industry SIC code to account for inter-industry variance (12, 13). Due to the use of these two sources of data, the survey and COMPUSTAT, the final data set was comprised of 80 companies for which complete information was available.

RESULTS

Descriptive statistics are presented in Table 2. The intercorrelations among the variables, although in some cases significant, fall well below the .8 cutoff point as suggested by Belsley, Kuh and Welsch (4). Because they did not exceed the cutoff point we did not concern ourselves with the factors unduly influencing each other. It is interesting that the highest degree of correlation appears to be among the four personnel variables Technical Specialty Knowledge, Technical Management Knowledge, Interpersonal & Management Knowledge, and Business Functional Knowledge. This appears to reinforce Turner's (40) contention that from management's point of view, these four variables actually act as a single dimension. Attempts to reduce these dimensions to one variable resulted in a loss of significance for the model.

The regression model is presented in Table 3. The estimation results explain approximately 28% of the ROS variable and the results of the F-test indicates that these factors contribute significantly to the explained variance of the ROS variable ($p=.039$).

In examining the individual independent variables the Variance Inflation Factors (VIF) are all above one which is similar to the results seen in the correlation matrix and the personnel pattern (TSK, TMK, IMS, BKF) again emerges with higher VIFs than the other variables. Utilizing a two-tailed t-test, we observed that five of the variables were significant at the .05 level (Modularity, Technical Specialty Knowledge, Primary Activity Efficiency, Resource Management Functionality, and Resource Acquisition Functionality), two at the .10 level (Support Activity Efficiency, Threat), and one at the .15 level (Preemptiveness). Due to the nature of this study and the use of a two-tailed t-test, we considered significance at the .15 level.

DISCUSSION

This study explored the relationship between IT capability factors and firm performance. Our discussion will focus on the variables that were significant. Modularity, Technical Skill Knowledge, Support Activity Efficiency, and Resource Acquisition Functionality were negatively related to ROS. Primary Activity Efficiency, Resource Management Functionality, Threat and Preemptiveness were positively related to ROS. These aspects appear to cover all three dimensions outlined earlier and we will address each aspect individually.

Modularity

The results of the regression analysis revealed that MOD is negatively associated with ROS. Several factors could explain the negative coefficient. Primarily, modularity is not something that can be achieved overnight and like other aspects of IT infrastructure the results will occur over time. This premise suggests that firms with a long-term perspective may utilize modularity while firms with more of a short-term focus may avoid it. We suggest that despite the currently negative influence from modularity, firms that are investing in modularity may see a positive influence on ROS in the long term.

TABLE 2
Descriptive Statistics

	ZROS	COM	MOD	TSK	TMK	IMS	BKF	PAE	SAE	RMF	RAF	THR	PRE	SYN
Mean	0.073	2.974	3.113	3.031	3.525	3.705	3.894	3.641	3.588	3.356	3.238	2.854	3.096	3.554
Std. Dev	0.459	0.624	0.558	0.519	0.826	0.607	0.831	0.593	0.648	0.548	0.635	0.464	0.628	0.677
ZROS	1.000													
COM	0.152	1.000												
MOD	-0.058	0.334 **	1.000											
TSK	-0.038	0.357 **	0.469 **	1.000										
TMK	0.077	0.198	0.207	0.520 **	1.000									
IMS	0.078	0.034	0.328 **	0.628 **	0.731 **	1.000								
BFK	-0.004	0.188	0.229 *	0.630 **	0.618 **	0.697 **	1.000							
PAE	0.073	0.276 **	0.426 **	0.487 **	0.166	0.133	0.260 *	1.000						
SAE	-0.039	-0.127	0.076	-0.013	0.081	0.043	-0.006	0.186	1.000					
RMF	0.190	0.060	0.225 *	0.284 *	0.234 *	0.206	0.115	0.226 *	0.187	1.000				
RAF	-0.139	-0.182	-0.230 *	-0.039	0.089	-0.134	-0.147	0.163	0.070	0.178	1.000			
THR	0.133	0.124	0.001	0.184	-0.218	-0.097	0.017	0.246 *	0.034	0.078	0.198	1.000		
PRE	0.104	0.188	0.338 **	0.423 **	0.129	0.265 *	0.200	0.261 *	0.330 **	0.041	-0.185	0.179	1.000	
SYN	0.078	-0.092	0.019	0.166	0.373 **	0.425 **	0.314 **	-0.047	0.249 *	0.317 **	0.128	-0.104	0.095	1.000

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

TABLE 3
Regression Summary

	Model				
R sq.	0.279				
Sig.	0.039				
Deg Freedom	13/66				
	Unstandardized		Standardized		
	B	Std. Error	Beta	t	VIF
Constant	-0.628	0.658		-0.955	
COM	0.128	0.097	0.174	1.315	1.600
MOD	-0.228	0.113	-0.277	-2.013***	1.732
TSK	-0.436	0.171	-0.492	-2.551***	3.405
TMK	0.115	0.106	0.207	1.086	3.327
IMS	0.207	0.163	0.273	1.268	4.236
BFK	-0.109	0.094	-0.197	-1.155	2.646
PAE	0.220	0.110	0.284	2.010***	1.830
SAE	-0.146	0.089	-0.205	-1.638**	1.436
RMF	0.235	0.102	0.281	2.310***	1.350
RAF	-0.217	0.097	-0.300	-2.232***	1.651
THR	0.222	0.124	0.224	1.794**	1.425
PRE	0.142	0.098	0.194	1.448*	1.635
SYN	0.046	0.089	0.068	0.518	1.571

*** p<.05 for a two-tailed t-test

** p<.10 for a two-tailed t-test

* p<.15 for a two-tailed t-test

Technical Specialty Knowledge

The results of the regression analysis revealed that TSK is negatively associated with ROS. This result suggests that those firms who have invested in technology skills may not see a return on their investment. Unlike modularity, a positive influence on ROS may not be evident over time. We believe that individual skill sets are not in and of themselves scaleable into business applications without a meaningful level of planning.

Support Activity Efficiency

The results of the regression analysis revealed that SAE is negatively associated with ROS. As the name implies, this

construct focuses on the support issues such as administration, recruiting, and hiring. In most cases, SAE is not considered core competency of the business, and by nature a negative coefficient would be expected. With the advent of new business environments such as e-commerce, and the increased emphasis on the cost of back end operations, future studies may reveal SAE having a positive influence on ROS.

Resource Acquisition Functionality

The results of the regression analysis revealed that RAF is negatively associated with ROS. This negative relationship is subject to multiple interpretations. We suggest two primary themes; decentralized versus centralized processing. As the items of the questionnaire focused on the process of ordering, acquisition, and validation of resources, the decentralized view suggests that as these functions are minimized or simplified excesses in acquisition may occur. The centralized view would suggest that acquisition may be inhibited with additional complexity.

Primary Activity Efficiency

The results of the regression analysis revealed that PAE is positively associated with ROS. This factor represents the maximization of value-added operations, reflecting some form of competitive advantage or competency. Consider that the dimension of SAE above may represent the maximization of non-value-added operations.

Resource Management Functionality

The results of the regression analysis revealed that RMF is positively associated with ROS. RMF represents the efficient management of resources. If done properly, this should lead to greater efficiencies and thus a positive influence on ROS.

Threat

The results of the regression analysis revealed that THR is positively associated with ROS. The management of THR represents the ability to correctly identify the most appropriate business partners (e.g., customers, suppliers). We suggest that the greater a company's ability to administer the THR parameters the greater the potential exists for ROS. Companies that are better equipped to deal with THR will be more efficient, effective and will minimize risks from external entities.

Premptiveness

The results of the regression analysis revealed that PRE is positively associated with ROS. Premptiveness in this study includes a firm's ability to influence the development of technical standards and practices. This factor also represents items that would be attributed to first movers. Many studies have shown that first movers generally receive a larger return on their investment.

LIMITATIONS & FUTURE RESEARCH

This study has several limitations. First, the sample size is small and consists of fairly large publicly traded companies. These facts make it difficult to make generalizations. In future research, an effort should be made to sample a larger number of companies both small and large, public and private.

Secondly, the factors were derived using an average of the applicable questions to a survey and there was no weighting of the variables that comprise each factor.

Finally, the method employed was regression analysis which cannot account for causality. Future studies should employ a more advanced tool to further aid in the understanding of the relationships and causality of these factors.

CONCLUSION

There is still much to be learned in the area of ITI. This paper explored the relationship between IT infrastructure capabilities and firm performance. ROS appeared to be an adequate measure of firm performance, due to its ability to indicate a firm's competitive advantage and resource/ competitive flexibility. Eight factors significantly affected ROS, four negatively and four positively. As an exploratory analysis, empirical evidence provided insights into the factors that affect ROS and theoretical explanations were presented. Finally, limitations of the study plus future research were discussed.

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APPENDIX A

COM - Compatibility

- Our organization utilizes open systems network mechanisms to boost connectivity (e.g., ATM, FDDI).
- There are very few identifiable communications bottlenecks within our organization.
- Our organization utilizes a virtual network or VLAN to connect end users.
- End users utilize object-oriented tools to create their own applications.
- Remote, branch, and mobile offices do not have to perform any additional steps or procedures to access data from the home or central office.
- End users throughout the organization utilize a common operating system (e.g., UNIX, OS/2).
- Software applications can be easily transported and used across multiple platforms.
- Our organization offers a wide variety of types of information to end users (e.g., multi-media).
- Our user interfaces provide transparent access to all platforms and applications.
- Our organization provides multiple interfaces or entry points (e.g., web access) for external end users.
- Our organization utilizes online analytical processing (OLAP).

APPENDIX A (cont'd)

MOD - Modularity
- Our organization has formally addressed the issue of data security with access to a number of protocols (e.g., Kerberos V.5, MIME, PGP, S-HTTP).
- All remote, branch, and mobile offices are connected to the central office.
- Reusable software modules are widely used in new systems development.
- IT personnel utilize object-oriented technologies to minimize the development time for new applications.
- Our corporate database is able to communicate through many different protocols (e.g., SQL, ODB).
- Mobile users have ready access to the same data used at desktops.
- Our organization easily adapts to various vendors' data base management systems protocols and standards.
- Data captured in one part of our organization are immediately available to everyone in the organization.

TSK - Technical Specialty Knowledge
- Data received by our organization from electronic links (e.g., EDI, EFT) are easily interpretable.
- Our IT personnel are skilled in multiple programming languages.
- Our IT personnel are skilled in multiple types of data bases (e.g., network, relational, object-oriented).
- Our IT personnel are skilled in multiple structured programming, CASE methods or tools.
- Our IT personnel are skilled in multiple mainframe computer operating systems.
- Our IT personnel are skilled in multiple microcomputer operating systems.
- Our IT personnel are skilled in expert systems or artificial intelligence.
- Our IT personnel are skilled in decision support systems.
- Our IT personnel are competent in managing the development life cycle of projects.
- Our IT personnel are skilled in distributed processing or distributed computing.
- Our IT personnel are skilled in network management and maintenance.

TMK - Technical Management Knowledge
- Our IT personnel are encouraged to learn new technologies.
- Our IT personnel closely follow the trends in current technologies.
- Our organization often uses IT as a component for an information based innovation.

IMS - Interpersonal & Management Knowledge
- Our IT personnel are self-directed and proactive.
- Our IT personnel are very capable in teaching others.
- Our IT personnel have the ability to plan, organize, and lead projects.
- Our IT personnel have the ability to plan and execute work in a collective environment.
- Our IT personnel have the ability to accomplish multiple assignments.
- Our IT personnel work well in cross functional teams addressing business problems.
- Our IT personnel have the ability to work cooperatively in a project team environment.
- Our IT personnel have the ability to work closely with clients and customers.
- Our IT personnel have the ability to write clear, concise, and effective memos, reports, and documentation.
- Our IT personnel have the ability to develop and deliver information and persuasive presentations.

BFK - Business Functional Knowledge
- Our IT personnel understand the business environments they support.
- Our IT personnel are encouraged to learn about business functions.
- Our IT personnel are able to interpret business problems and develop appropriate technical solutions.
- Our IT personnel are knowledgeable about business functions.

PAE - Primary Activity Efficiency
- In our organization, IT reduces the cost of transforming material inputs into customer deliverable outputs (e.g., manufacturing technologies).
- In our organization, IT reduces the cost of receiving and warehousing product inputs (e.g., material handling).
- In our organization, IT reduces the cost of collecting, storing, and distributing products (e.g., order processing, scheduling).
- In our organization, IT reduces the cost of providing service to maintain or enhance the value of the product.

SAE - Secondary Activity Efficiency
- In our organization, IT applications assist in reducing the cost of recruiting, hiring, and training organizational personnel.
- In our organization, IT reduces the cost of general management activities (e.g., planning, accounting, finance).
- In our organization, IT reduces the cost of coordinating activities (e.g., purchasing, marketing, sales).

RMF - Resource Management Functionality
- In our organization, IT assists the activity of monitoring the use of resources (e.g., tracking power utilization).
- In our organization, IT assists the activity of upgrading a resource (e.g., adding an additional production).
- In our organization, IT assists the activity of transferring or disposing of a resource.
- In our organization, IT assists the activity of evaluating the overall effectiveness or usefulness of a resource.

RAF - Resource Acquisition Functionality
- In our organization, IT applications assist in the ordering or request process for a resource.
- In our organization, IT applications assist in the physical acquisition of a resource (e.g., remote power switching).
- In our organization, IT applications assist in verifying that the resource meets specifications (e.g., error control).

THR - Threat
- Our organization would incur significant cost increases if we changed to alternate suppliers.
- IT assists our organization's ability to threaten suppliers and customers with vertical integration (e.g., assimilate external functions).
- IT assists in our organization's ability to evaluate various and select the most appropriate suppliers.
- IT assists in our organization's ability to evaluate and choose the most appropriate customers.
- Our customers would incur significant cost increases if they were to change to alternate suppliers.
- Our customers would incur significant costs in locating alternate suppliers.

PRE - Preemptiveness
- Our organization's market position is such that competitors are forced to adopt less favorable postures.
- Our organization is protected from imitation by institutional barriers (e.g., patents, copyrights).
- Our organization has influenced the development of technical standards and practices in the industry.

SYN - Synergy
- The strategies of our IT group are well aligned with our organization's marketing policies and practices.
- Our top management is involved in and supports the IT system and applications.
- Our organization has the ability to continuously innovate and enhance IT applications.