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The Impact of Strategic Alignment Maturity of Business and Information Technology on Performance: Case Study of Jordan Public Sector Organizations

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ABSTRACT

This research discusses the impact of alignment between business and information technology on organizations' performance and taking into consideration the rapid changing into technology. Strategic Alignment Maturity Assessment has enablers and inhibitors. Empirical study made on Jordanian public sector organizations to assess the alignment by using different criteria's Such as: Communications Maturity, Competency/Value Measurement Maturity, Governance Maturity, Partnership Maturity, Scope & Architecture Maturity, Skills Maturity. Researcher used quantitative approach in this study which consists of survey about properties and variable and their relations; where features are classified, analyzed, and statistical models are constructed to justify what is observed. Research Hypotheses were tested and model was built according to the results.
KEYWORDS: Alignment, information technology, business, Strategic Alignment Maturity Assessment, performance.

1. INTRODUCTION

Alignment process is considered as a very important concern of business executives as per the studies conducted by research firms, consultants and academics. Luftman (2003) strategic alignment is a very important matter that management and business may face today, so strategic alignment has a primary part in capitalizing the organizations' IT Investment, it is in an organization's best interest to have a detailed understanding of what alignment is and the benefits it provides. Hilgers et.al (2004). Ward and Peppard (2002) indicate that the benefits that IT provides to organizations have become more considerable. The executive level also involve in this process. The most effective method of reaching strategic benefits from IS/IT is by concentrating on the rethinking of business by analyzing current business problems and environmental change, and considering IT as just one part of the solution. IS and IT Considered as any other part of the business in the organization such as marketing, production and purchasing which should operate efficiently and effectively in order to compete with other organizations and survive (Ward and Peppard,2002). Strategic alignment is very important for organizations and to apply it before information systems can be selected in order to achieve the maximum level of effectiveness for IT (Chan and Huff, 1993). According to Kaplan (2003), IT by itself does not clearly present a competitive advantage. Organizations should use IT strategically to enhance business processes, and to attain the competitive advantage. Business firms need to develop effective business strategies to help them to compete effectively. Business strategy has been characterized as the way in which a firm decides to compete, pursue, achieve and maintain its competitive advantage in an industry. Firms can gain their competitive advantage by producing value to their customers. Moreover, a firm can develop its competitive advantage by performing the chain of strategically important activities (such as production, marketing, sales, service, human resource management, technology development, procurement activities) cheaply or better than its competitors(Seyed Abbas,2012).

Henderson and Venkatraman(1993) emphasized that strategic alignment is vital for improving organizations performance . Luftman and Brier (1999:110) indicated that "*alignment grows in importance as companies strive to link business and technology in light of dynamic business strategies and continuously evolving technologies*". According to Papp (2001) Misalignment can cause difficulties for organizations in preventing IT from being leveraged to its highest level within an organizations. Beal (2004) clarified that all organizations be aware of the importance of strategic alignment, few numbers of organizations consider themselves that they are applying it correctly. According to Luftman (2000), the main benefits of alignment are:

- First: doing the right thing which resemble effectiveness
- Second: doing things right which resemble efficiency

According to Guttman (2004) organizations operate smoothly and accomplishing their results in effective way if the IT and business are aligned in suitable manner. Alignment within an organization ensures that activities throughout the organization are directed towards the accomplishment of shared goals (Puth, 2002). Luftman and Brier (1999) indicate that strategic alignment is vital, as it can build a strategically important advantage that will offer organizations with better visibility,

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efficiency, and profitability to operate a dynamic changing markets. Successful business strategy integrates the role of IT with the role of the business. It is vital to ensure that IT's endeavors and goals are successfully directed toward the efforts of the business in order to enhance the business value (Atter *et al*, 2002). Henderson and Venkatraman (1993) suggested a model framework for alignment. They suggested that the model was established for conceptualizing and directing the emerging area of strategic management of IT. Their framework, recognized as the strategic alignment model (SAM), describes alignment along two dimensions. First step was, the element of *strategic fit* which differentiates between the external domain and internal domain. External domain is the real industry and their situation in the marketplace, while the internal domain is the infrastructure and processes of the organization, and the configuration and management of the IT infrastructure. Second step was the element of *functional integration* which separates business and IT, which means that as the business strategy changes, the IT strategy must also change in order to be in harmony. The effect of alignment has been recognized and well documented since 1970. The significance of Alignment appear as organization's struggle to connect technology and business with regards to dynamic business strategies to the rapid technological change .What is new is how to assess the maturity of alignment and how to sustain and improve the maturity of alignment. According to the large use of IT in organizations, large transformation occurred in business strategy. Effectiveness and efficiency can be enhanced through Alignment. The duty of Information Technology (IT) has changed significantly over the years, and has presently transferred from enabling the business, to effectively becoming the business (Luftman, 2000). Strategic alignment can be defined as "*applying IT in an appropriate and timely way, in harmony with business strategies, goals and needs* (Luftman, 2003). There has been an obvious raise in the impact of IT on business Performance. During the last decade , according to this impact, great number of organizations invest in IT in order to enhance their competitive advantage and their business performance, (Hu and Huang, 2004). Organizations should respond quickly to the regular change in the business environment in order to maintain the alignment between IT and business to achieve better performance (Luftman,2003). According to Chan, Huff, Copeland and Barclay (1997) strategic alignment is the effective predictor to measure business performance than business strategy or IT strategy. Information technology is a very useful tool for managing information in the organizations and considered vital for the continued existence and success of an organization (ITGI, 2005). Luftman (2000) described the importance of strategic alignment as the management activities that accomplish joint objectives across IT and other functional units in order to reach optimization level of alignment. After we notice the importance of strategic alignment between IT and business and its role in enhancing performance of organizations, we should find a suitable tool to measure and assess the level of alignment. Organizations can check their position regarding to strategic alignment through understanding of their maturity level, and thus enhance their current level (Luftman ,2003).

2. STRATEGIC ALIGNMENT MATURITY ASSESSMENT

Symons (2005) indicated that if the organizations need to enhance their level of strategic alignment, they should first assess their position in strategic alignment maturity model. Organizations should try to reach and maintain the highest level of alignment, the optimized level (Luftman, 2003). Alignment of IT strategy with the organization's business strategy is a fundamental principle advocated for over a decade (Robson, 1994; Rogers 1997;Rockart et al. 1996). According to Luftman(1999) there are some enablers that help in the alignment process in the organization and some inhibitors that delay the alignment process in the organization as shown in the table below.

Table 5.1 : The Enablers and Inhibitors of Alignment

	ENABLERS	INHIBITORS
1	Senior executive support for IT	IT/business lack close relationships
2	IT involved in strategy development	IT does not prioritize well
3	IT understands the business	IT fails to meet commitments
4	Business - IT partnership	IT does not understand business
5	Well-prioritized IT projects	Senior executives do not support IT
6	IT demonstrates leadership	IT management lacks leadership

Luftman(1999) indicated that there are six criteria that organizations can check to measure the level of alignments between IT and Business alignment, these criteria are :

1. Communications Maturity
2. Competency/Value Measurement Maturity
3. Governance Maturity
4. Partnership Maturity
5. Scope & Architecture Maturity
6. Skills Maturity

The process of checking the previous criteria will lead to know the level of alignment maturity organization reaches which is classified to five levels of strategic alignment maturity:
1. Initial/Ad Hoc Process
2. Committed Process
3. Established Focused Process
4. Improved/Managed Process
5. Optimized Process

3. ORGANIZATION'S PERFORMANCE

Kaplan & Norton (2000) indicated that performance can be identified as the ability of an entity to produce results in a dimension determined a priori, in comparison to goals. Measuring and improving performance is a key to ensure the successful implementation of an organization's strategy (Laitinen, 2002). An efficient system of performance measurement may be the powerful method at management's disposal to enhance the probability of successful strategy implementation (Lynch et.al, 1991). Performance consists of two structures: the first is the objective function which can be measured by financial criteria such as market share profitability, capacity utilization and the second structure is subjective performance or judgment expressed based on customer and staff such as service quality, customer satisfaction, employee satisfaction. According to some researchers, the main goal of market oriented companies is to create and maintain customer's satisfaction (Hooley et al, 2005). Companies achieve maximum performance by creating and maintaining mutual interaction between the company and customers in the long term. Basically, in the marketing concept, the subjective performance (judgmental) is superior and is an excellent prerequisite in objective performance (Mohammad Taqi Amin et.al.,2013). According to the previous studies, strategic alignment maturity between business and technology has impact on performance of organizations.

4. THE RESEARCH OBJECTIVES

The research should achieve the following objectives:

- Describing the importance of alignment between business and information technology.
- Describing the impact of alignment on performance.
- Finding a suitable criteria to assess the alignment between business and information technology in Jordanian public sector organizations
- Recommend these results for further study

5. PROBLEM STATEMENT

There is no clear method to assess the alignment between business and information technology in Jordanian public sector organizations. This study suggests a method for assessing alignment by using suitable criteria such as: Communications Maturity, Competency/Value Measurement Maturity, Governance Maturity, Partnership Maturity, Scope & Architecture Maturity and Skills Maturity.

6. THE RESEARCH HYPOTHESES

H1: There is a Positive Relation between Communication and business – IT alignment.
H2: There is a Positive Relation between Competency/Value Measurements and business – IT alignment.
H3: There is a Positive Relation between Governance Measurements and business – IT alignment.
H4: There is a Positive Relation between Partnership Measurements and business – IT alignment.
H5: There is a Positive Relation between Scope and Architecture Measurements and business – IT alignment.
H6: There is a Positive Relation between Skill Measurements and business – IT alignment.
H7: There is a Positive Relation between business – IT alignment and Performance.

7. THE RESEARCH MODEL

According to the research Hypotheses, author suggest the following model for this study

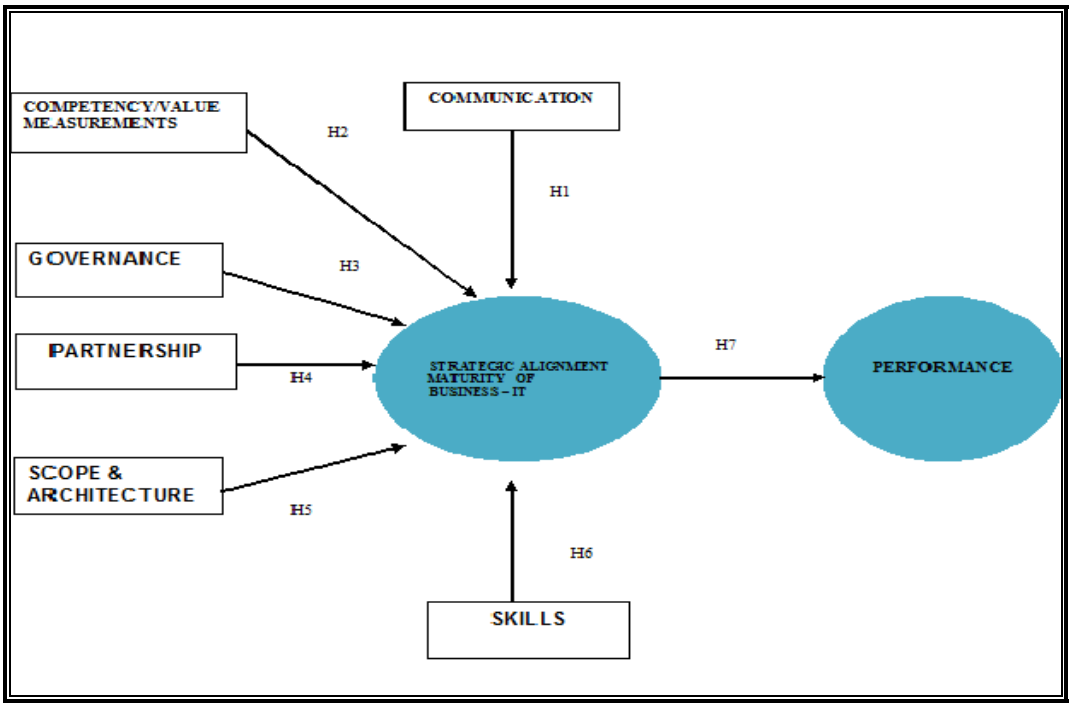

Figure 1 : Research Model

8. THE RESEARCH METHODOLOGY

8.1 Research Approach

Researcher used quantitative approach in this study which consists of survey about properties and variable and their relations; where features are classified, analyzed, and statistical models are constructed to justify what is observed. Quantitative research begins from a specified hypothesis that must be proved or disproved. According to Brown & Lloyd (2002) Quantitative approach use large random samples that is representative of the general population. Quantitative analysis results can be generalized to a larger population and make the comparison of different attributes very easily (LAMEL, 2007). In this research, author has made a survey in the form of Questionnaire to investigate the relationship between strategic alignment maturity of Business – IT and Performance.

8.2 Questionnaire:

According to Lanthier (2002) a questionnaire is a set of questions distributed on a sample of people, with a purpose of collecting information about the people's attitudes, behaviour, beliefs, etc about a certain subject. A survey has been made in Jordanian public sector organizations in the form of Questionnaire to investigate the relationship between IT-Business strategic alignment maturity criteria and its role in enhancing performance in business organizations**.** The final structure of the questionnaire in this research consists of 38 statements with the type of closed-ended questions, the likert scale was adopted which often range from 1 to 5, the respondents indicate their extent of agreement with a statement from a scale of 1 to 5, where 1= strongly agree, 2 = agree, 3 = neutral, 4 = disagree and 5 = strongly disagree (Saunders et al., 2007).

8.3 Strategic Alignment Criteria

8.3.1 Communications

According to (Luftman,2000), efficient exchanging process of information through organizations are very important for strategies and that are high on the list of enablers and inhibitors to alignment. Knowledge sharing through organizations is a very important issue and also organizations should ensure that use people in formal inter-unit liaison roles, Cooperation among business-IT partners, Trust and openness between units and IT. The table below shows the Questionnaire to check the alignment between business and IT through communication criteria.

Table 8.1 : Questionnaire of communication criteria

Q1	**IT department understanding business goals**
Q2	Business organization understand IT Roles
Q3	inter/intra organizational learning
Q4	The Protocol Rigidity
Q5	The Knowledge Sharing
Q6	IT-Business Liaison(s) Breadth / Effectiveness

8.3.2Competency/Value Measurements

According to (Luftman, 2004) there are different factors that can be used as criteria to check the competency and value measurements in the organizations. These criteria should embrace the role of IT and understood by business such as:

- Service levels that assess commitment of IT
- Tie service levels to criteria
- Take action based on measurements of performance factors
- Understand factors that lead to missing criteria
- Understand what can be learned to improve the environment continuously

The table below shows the Questionnaire to check the alignment between business and IT through competency/value criteria.

Table 8.2: Questionnaire of competency/value criteria

Q7	**IT metrics**
Q8	Business metrics
Q10	Service level agreements
Q11	Benchmarking
Q12	Formal assessments reviews
Q13	Continuous improvement

8.3.3 Governance

IT Governance is part of governance and defined as "*a structure of relationships and processes to direct and control the enterprise in order to achieve the enterprise's goals by adding value while balancing risk versus return over IT and its processes*" (ITGI, 2000a:5). According to (Luftman and Brier,1999), decision-making authority needs to be clearly defined ensuring that the appropriate business and IT participants formally discuss and review the priorities and allocation of IT resources. In IT Governance, following are the issues organization should concentrate on:

- Clearly defined decision-making authority
- Integrated enterprise-wide strategic business plan

The table below shows the Questionnaire to check the alignment between business and IT through governance criteria.

Table 8.3 : Questionnaire of Governance criteria

Q14	**Business strategic planning**
Q15	IT strategic planning
Q16	Reporting organization structure
Q17	Budgetary control
Q18	IT investment management
Q19	Steering committee
Q20	Prioritization process

8.3.4 Partnership

Luftman (2000) indicated that partnership between business and IT is very important in the alignment process in organizations. The following issues are very important to achieve Partnership in organizations:

- Relationship between business and IT organizations
- Give IT function equal role in defining business strategy
- Perception of contributions
- Partnership should enable and drive change

The table below shows the Questionnaire to check the alignment between business and IT through partnership criteria.

Table 8. 4 : Questionnaire of Partnership criteria

Q21	**Business perception of IT**
Q22	Role of IT in strategic business planning
Q23	Shared goals, risk, rewards and penalties
Q24	IT program management
Q25	Relationship trust style
Q26	Business sponsor and champion

8.3.5 Scope & Architecture

According to Luftman (2004), scope and architecture criteria tends to assess information technology maturity. The extent to which IT is able to assist on the following issues:

- go beyond the back office and the front office of the organization
- assume a role supporting a flexible infrastructure that is transparent to all business partners and customers.
- evaluate and apply emerging technologies effectively
- enable or drive business processes and strategies as a true standard
- provide solutions customizable to customer needs

The table below shows the Questionnaire to check the alignment between business and IT through scope and architecture criteria.

Table 8.5: Questionnaire of scope and architecture criteria

Q27	**Scope of primary systems**
Q28	enabler drivers
Q29	Standards articulation
Q30	Architectural transparency
Q31	Architectural integration

8.3.6 Skills

It consist of all of the human resource concerns for the organization and go beyond the traditional considerations such as training, salary, performance feedback, and career opportunities. Also the cultural and social environment of the organization is considered (Luftman, 2004).

The table below shows the Questionnaire to check the alignment between business and IT through skills criteria.

Table 8.6: Questionnaire of skills criteria

Q32	**Innovation and entrepreneurship**
Q33	Locus of power
Q34	Management style
Q35	Change readiness
Q36	Career crossover
Q37	Education, cross training
Q38	Attract and retain best talent

9. OPERATIONALIZATION AND MEASUREMENT OF THE MODEL VARIABLES

9.1 Communication (COMM)

The Factor analysis showed a one-factor solution of communication (COMM) construct, the loading factor range from 0.83 to 0.72 with average loading for the factor 0.77, this factor explains 57% of total variance, and the factor has eigenvalue greater than 1. The factor analysis demonstrate an obvious discriminate validity because all items are loaded on one factor, and Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was 0.81 which shows that the sample is enough to achieve this test, reliability was calculated based on Cronbach's alpha, the measure was 0.80 which demonstrate a reasonable reliability for communication. As all variables loaded significantly on a single dimension as indicated by EFA, a summated variable was derived for the five items question 1-6, accordingly Communication variables are represented in this study through one dimension Communication (COMM).

Table 9.1: Communication between business and IT (COMM)

Extraction Method: Principal Component Analysis Rotation Method: Varimax with Kaiser Normalization		
Variables	Items	Loading
Q1	IT department understanding business goals	0.78
Q2	Business organization understand IT Roles	0.77
Q3	inter/intra organizational learning	0.83
Q4	The Protocol Rigidity	0.75
Q6	IT-Business Liaison(s) Breadth / Effectiveness	0.72
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.81
Cronbach's alpha		0.80
Bartlett's Test of Sphericity	Approx. Chi-Square	908.70
	Degree of freedom	10
	Significant	.000

9.2 Competency / Value Measurements (CVM)

The Factor analysis showed a one-factor solution of communication (CVM) construct, the loading factor range from 0.77 to 0.65 with average loading for the factor 0.72, this factor explains 55% of total variance, and the factor has eigen value greater than 1. The factor analysis demonstrate an obvious discriminate validity because all items are loaded on one factor, and Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was 0.85 which shows that the sample is enough to achieve this test, reliability was calculated based on Cronbach's alpha, the measure was 0.82 which demonstrate a reasonable reliability for communication. As all variables loaded significantly on a single dimension as indicated by EFA, a summated variable was derived for the five items question 7-13, accordingly Competency/ Value Measurements (CVM) variables are represented in this study through one dimension Competency/ Value Measurements (CVM).

Table9.2: Competency / Value Measurements (CVM)

Extraction Method: Principal Component Analysis Rotation Method: Varimax with Kaiser Normalization		
Variables	Items	Loading
Q7	IT metrics	0.70
Q8	Business metrics	0.76
Q10	Service level agreements	0.72
Q12	Formal assessments reviews	0.65
Q13	Continuous improvement	0.77
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.85
Cronbach's alpha		0.82
Bartlett's Test of Sphericity	Approx. Chi-Square	1114.70
	Degree of freedom	10
	Significant	.000

9.3 Governance (GVN)

The Factor analysis showed a one-factor solution of governance **(GVN)** construct, the loading factor range from 0.80 to 0.71 with average loading for the factor 0.74, this factor explains 53% of total variance, and the factor has eigen value greater than 1. The factor analysis demonstrate an obvious discriminate validity because all items are loaded on one factor, and Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was 0.83 which shows that the sample is enough to achieve this test, reliability was calculated based on Cronbach's alpha, the measure was 0.81 which demonstrate a reasonable reliability for Governance . As all variables loaded significantly on a single dimension as indicated by EFA, a summated variable was derived for the five items question 14-20, accordingly Governance (GVN) variables are represented in this study through one dimension Governance (GVN).

Table 9.3: Governance (GVN)

Extraction Method: Principal Component Analysis Rotation Method: Varimax with Kaiser Normalization		
Variables	Items	Loading
Q14	Business strategic planning	0.72
Q15	IT strategic planning	0.77
Q16	Reporting organization structure	0.73
Q17	Budgetary control	0.80
Q18	IT investment management	0.72
Q19	Steering committee	0.75
Q20	Prioritization process	0.71
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.83
Cronbach's alpha		0.81
Bartlett's Test of Sphericity	Approx. Chi-Square	756.1
	Degree of freedom	10
	Significant	.000

9.4 Partnership (PRN)

The Factor analysis showed a one-factor solution of Partnership **(PRN)**construct, the loading factor range from 0.81 to 0.73 with average loading for the factor 0.76, this factor explains 55% of total variance, and the factor has eigen value greater than 1. The factor analysis demonstrate an obvious discriminate validity because all items are loaded on one factor, and Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was 0.82 which shows that the sample is enough to achieve this test, reliability was calculated based on Cronbach's alpha, the measure was 0.80 which demonstrate a reasonable reliability for Partnership . As all variables loaded significantly on a single dimension as indicated by EFA, a summated variable was derived for the five items question 21-26, accordingly Partnership (PRN) variables are represented in this study through one dimension Partnership (PRN).

Table 9.4: Partnership (PRN)

Extraction Method: Principal Component Analysis Rotation Method: Varimax with Kaiser Normalization		
Variables	Items	Loading
Q21	Business perception of IT	0.75
Q22	Role of IT in strategic business planning	0.76
Q23	Shared goals,risk,rewards and penalities	0.74
Q24	IT program management	0.81
Q25	Relationship trust style	0.73
Q26	Business sponsor and champion	0.75
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.82
Cronbach's alpha		0.80
Bartlett's Test of Sphericity	Approx. Chi-Square	1432.270
	Degree of freedom	10
	Significant	.000

9.5 Scope & Architecture(SCA)

The Factor analysis showed a one-factor solution of Scope & Architecture(SCA)construct, the loading factor range from 0.82 to 0.72 with average loading for the factor 0.78, this factor explains 52% of total variance, and the factor has eigen value greater than 1. The factor analysis demonstrate an obvious discriminate validity because all items are loaded on one factor, and Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was 0.84 which shows that the sample is enough to achieve this test, reliability was calculated based on Cronbach's alpha, the measure was 0.83 which demonstrate a reasonable reliability for Partnership . As all variables loaded significantly on a single dimension as indicated by EFA, a summated variable was derived for the five items question 27-31, Scope & Architecture(SCA) variables are represented in this study through one dimension Scope & Architecture(SCA).

Table 9.5: Scope & Architecture(SCA)

Extraction Method: Principal Component Analysis Rotation Method: Varimax with Kaiser Normalization		
Variables	Items	Loading
Q27	Scope of primary systems	0.81
Q28	enabler drivers	0.77
Q29	Standards articulation	0.78
Q30	Architectural transparency	0.72
Q31	Architectural integration	0.82
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.84
Cronbach's alpha		0.83
Bartlett's Test of Sphericity	Approx. Chi-Square	978.159
	Degree of freedom	10
	Significant	.000

9.6 Skills (SKL)

The Factor analysis showed a one-factor solution of Skills (SKL) construct, the loading factor range from 0.83 to 0.72 with average loading for the factor 0.79, this factor explains 53% of total variance, and the factor has eigen value greater than 1. The factor analysis demonstrate an obvious discriminate validity because all items are loaded on one factor, and Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was 0.79 which shows that the sample is enough to achieve this test, reliability was calculated based on Cronbach's alpha, the measure was 0.80 which demonstrate a reasonable reliability for Partnership . As all variables loaded significantly on a single dimension as indicated by EFA, a summated variable was derived for the five items question 32-38, Skills (SKL),variables are represented in this study through one dimension Skills (SKL).

Table 9.6: Skills (SKL)

Extraction Method: Principal Component Analysis **Rotation Method: Varimax with Kaiser Normalization**		
Variables	Items	Loading
Q32	Innovation and entrepreneurship	0.82
Q33	Locus of power	0.76
Q34	Management style	0.77
Q35	Change readiness	0.74
Q36	Career crossover	0.83
Q37	Education, cross training	0.81
Q38	Attract and retain best talent	0.72
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.79
Cronbach's alpha		0.80
Bartlett's Test of Sphericity	Approx. Chi-Square	1313.215
	Degree of freedom	10
	Significant	.000

10. RESULTS AND DATA ANALYSIS

10.1 Introduction

Research analysis goes through two stages: the first stage was the descriptive analysis via SPSS software which assists us in describing the samples and to analyze measurement scales. Factor analysis can be used to validate and measure the internal consistency of constructs. The second stage was examining the hypotheses by using the partial least squares (PLS) method to analyze the collected data.

10.2 Sample Descriptive Analysis

The table below shows the level of Education, Age, Gender and Experience numbers.

Table 10.2 Respondents Demographics

		Frequency	**Percent**
Level of Education	High school	32	16
	College	20	10
	High diploma	10	5
	Bachelor	100	50
	Master	30	15
	PhD	8	4
	Total	**200**	**100**
Age	Less than 25	30	15
	Between 25-35	70	35
	Between 36-47	80	40
	Above 48	20	10
	Total	**200**	**100**
Gender	Male	47	23.5
	Female	153	76.5
	Total	**200**	**100**
Experience	5 years and less	60	30
	Between 6-10 years	85	42.5
	11 years and above	55	27.5
	Total	**200**	**100**

It's appearing from the previous table that most respondents have Bachelor's degree with a percent of 50% and the second respondents were high school with a percent of 16%. The third respondents were master degree at (15%) and the fourth respondents were the college degree at (10%). The rest of the respondents have PhD degree with percent of 4%.

10.3 Measurement Model Validity

To validate measurement model in the proposed model, three types of validity were achieved: first content validity, second convergent validity, and finally discriminate validity. Content validity was launched by ensuring consistency between the measurement items and the relevant literature. This was done by interviewing senior practitioners and pilot-testing the instrument. Secondly convergent validity was done by testing composite reliability and average variance extracted from the measures (Hair et al., 1998). Although many studies employing PLS have used 0.5 as the threshold reliability of the measures,

0.7 is a recommended value for a reliable construct (Chin et al., 1996). Finally, we confirmed the discriminate validity of instrument by checking the square root of the average variance extracted as recommended by Fornell & Larcker (1981).

Table 10.3 Multi-Variant Normality Test

Variable	Mean	Standard Division	Skewness	Kurtosis
COMM	2.14	0.71	0.87	1.01
CVM	2.35	0.76	0.52	0.24
GVN	2.444	0.69	0.59	0.45
PRN	2.60	0.72	0.26	-0.16
SCA	2.53	0.77	0.54	0.14
SKL	2.28	0.68	0.78	0.87

10.4 Partial Least Squares (PLS) Product Indicator Approach For Measuring Interaction .

Traditional techniques may not be able to detect interaction effects. Some traditional methods such as analysis of variance (ANOVA) and moderated multiple regression (MMR) face problems resulting from measurement error and the low statistical power that can result from such error. To solve difficulties that face traditional methods such as effects of measurement error, researcher in this study use product indicator approach in conjunction with Partial Least Squares (PLS). The predictor, moderator, and dependent variables used with traditional methods, viewed with the PLS method as latent variables (i.e., constructs) which cannot be measured directly. In PLS product, each set of indicators reflecting their underlying construct (i.e., latent variable) then submitted to PLS for estimation resulting in a more accurate assessment of the underlying latent variables and their relationships. PLS is considered as a suitable technique for explaining complex relationships (Fornell.& Youjae, 1992). The researcher used a tool in the analysis called SmartPLS 2.0 project which is located at the school of business at the University of Hamburg in Germany. SmartPLS 2.0 can be used in business research for the creation of path model and the measurement using partial least square approach. SmartPLS 2.0 redesigned to use java Eclipse platform technology. It allows creating and measuring a path model and evaluating the results. There is also additional functionalities can easily add them to the SmartPLS 2.0 java Eclipse Plug-ins.

10.5 Hypothesis Testing

A number of techniques used to assess the hypotheses of the model. The first method is the overall coefficient of determination (R square value) which is an indicator to measure the degree that the model fits the data, if the value of *R-square* close to 1.0, this indicates that the model accounted for almost all of the variability with the variables determined in the model. And if the R-Squared is 0.0, this means that one term doesn't assist you to know the other term. The second technique is using standardized estimation coefficients (beta). Standardized regression coefficients (beta coefficients, beta weights) are usually used in quantitative social sciences. They are used for many purposes: selecting variables, determining the relative importance of explanatory variables, comparing the effect of changing different variables, and so forth (Johan Bring, 1994). When the value of beta closes to zero, it means that the relationship is weak, but when the value of beta increased, this means the relationship is strong. Table 8.10 shows the results of the evaluation test for the data used in building research model.

Table 10.5 path analysis

		Test statistics	
Regression path		**Standardized Beta (β)**	**t- test**
		Measurement Model	
COMM	**BTLM**	0.31	2.84
CVM	**BTLM**	0.28	2.10
GVN	**BTLM**	0.08	1.2
PRN	**BTLM**	0.32	2.25
SCA	**BTLM**	0.37	2.39
SKL	**BTLM**	0.36	2.37
BTLM	**PEFR**	0.28	2.34

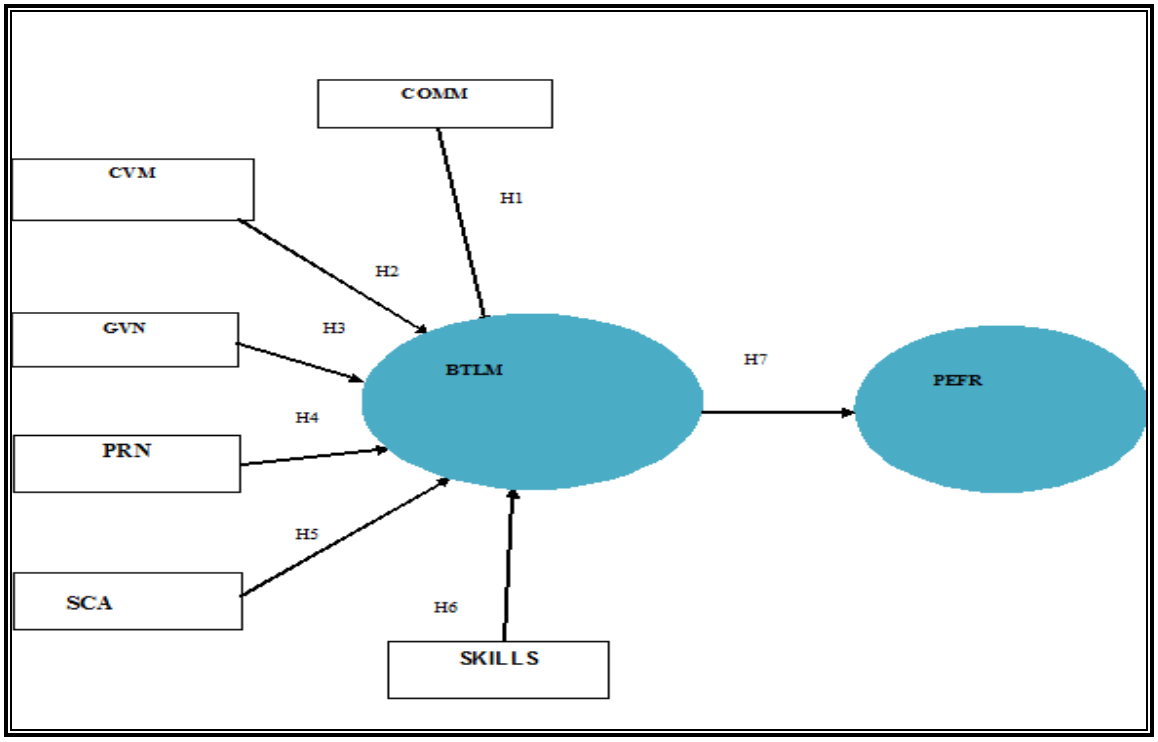

Figure 2 : Model of SmartPLS 2.0

11. DISCUSSION AND SUMMARY

The purpose of this study is to investigate the importance of IT-Business alignment. There were six criteria for IT-Business alignment through which we can check each organization IT-Business alignment. The outcomes of the statistical analysis are understood in order to arrive at practical suggestion that Jordan organizations can take benefit from IT-Business alignment process implementation. Each hypothesis is tested, analyzed and compared with other research findings.

11.1 Communication and Business – IT Alignment

There is a significant relation between communication and business-IT alignment

H1: COMM and BTLM:

Table 11.1 Test Statistics and the Result of Hypothesis H1

Regression Path	Test statistics		Results
	Standardized Beta	t-test	
COMM & BTLM	0.31	2.84	Accepted

Communication was hypothesized to be positively associated with Business–IT Alignment. According to the questionnaire results and SmartPLS analysis, beta was found to equal 0.31 which indicates the existence of positive significant relationship between Communication and Business–IT Alignment, and the t-value of the hypothesized model was significant with a value of 2.84. This indicated that Communication is part of Business–IT Alignment which corresponds with the writings of a large number of authors, such as (Luftman, 2000).

11.2 Competency/ Value Measurments and Business – IT Alignment

There is a significant relation between competency/value measurements and business– IT alignment.

H2: CVM and BTLM:

Table 11.2 Test Statistics and the Result of Hypothesis H2

Regression Path	Test statistics		Results
	Standardized Beta	t-test	
CVM & BTLM	0.28	2.10	Accepted

Competency/ Value Measurements were hypothesized to be positively associated with Business–IT Alignment. According to the questionnaire results and SmartPLS analysis, beta was found to equal 0.28 which indicates the existence of positive significant relationship between Competency/ Value Measurements and Business–IT Alignment and the t-value of the hypothesized model was significant with a value of 2.10. This indicated that Competency/ Value Measurements are part of Business–IT Alignment which corresponds with the writings of a large number of authors, such as (Luftman,2004).

11.3 Governance and Business – IT Alignment

There is a significant relation between Governance and Business–IT Alignment.

H3: GVN and BTLM:

Table 11.3 Test Statistics and the Result of Hypothesis H3

Regression Path	Test statistics		Results
	Standardized Beta	t-test	
GVN & BTLM	0.08	1.2	Accepted

Governance was hypothesized to be positively associated with Business–IT Alignment. According to the questionnaire results and SmartPLS analysis, beta was found to equal 0.08 which indicates the existence of positive significant relationship between Governance and Business–IT Alignment, The t-value of the hypothesized model was significant with a value of 1.2. This indicated that Governance is part of Business–IT Alignment which corresponds with the writings of a large number of authors, such as Luftman and Brier(1999) and ITGI (2000).

11.4 Partnership and Business – IT Alignment

There is a significant relation between Partnership and Business–IT Alignment

H4: PRN and BTLM:

Table 11.4 Test Statistics and the Result of Hypothesis H4

Regression Path	Test statistics		Results
	Standardized Beta	t-test	
PRN & BTLM	0.32	2.25	Accepted

Partnership was hypothesized to be positively associated with Business–IT Alignment. According to the questionnaire results and SmartPLS analysis, beta was found to equal 0.32 which indicates the existence of positive significant relationship between Partnership and Business–IT Alignment, and the t-value of the hypothesized model was significant with a value of 2.25. This indicated that Partnership is part of Business–IT Alignment which corresponds with the writings of a large number of authors, such as Luftman (2000).

11.5 Scope / Architecture and Business – IT Alignment

There is a significant relation between Scope/Architecture and Business – IT alignment.

H5: SCA and BTLM:

Table 11.5 Test Statistics and the Result of Hypothesis H5

Regression Path	Test statistics		Results
	Standardized Beta	t-test	
SCA & BTLM	0.37	2.39	Accepted

Scope / Architecture was hypothesized to be positively associated with Business–IT Alignment. According to the questionnaire results and SmartPLS analysis, beta was found to equal 0.37 which indicates the existence of positive significant relationship between Scope / Architecture and Business–IT Alignment, and the t-value of the hypothesized model was significant with a value of 2.39. This indicated that Scope / Architecture is part of Business–IT Alignment which corresponds with the writings of a large number of authors, such as Luftman (2004).

11.6 Skills and Business – IT Alignment

There is a significant relation between **SKL** and Business – IT alignment .

H6: SKL and BTLM :

Table 11.6 Test Statistics and the Result of Hypothesis H6

Regression Path	Test statistics		Results
	Standardized Beta	t-test	
SKL & BTLM	0.36	2.37	Accepted

Skills was hypothesized to be positively associated with Business–IT Alignment. According to the questionnaire results and SmartPLS analysis, beta was found to equal 0.36 which indicates the existence of positive significant relationship between Skills and Business–IT Alignment, and the t-value of the hypothesized model was significant with a value of 2.37 .This indicated that Skills is part of Business–IT Alignment which corresponds with the writings of a large number of authors, such as Luftman (2004) and (Laitinen, 2002).

11.7 Business – IT Alignment and Performance

There is a significant relation between Business – IT alignment and Performance.

H7: BTLM and PEFR

Table 11.7 Test Statistics and the Result of Hypothesis H7

Regression Path	Test statistics		Results
	Standardized Beta	t-test	
BTLM & PEFR	0.28	2.34	Accepted

Business–IT Alignment was hypothesized to be positively associated with Performance . According to the questionnaire results and SmartPLS analysis, beta was found to equal 0.28 which indicates the existence of positive significant relationship between Business–IT Alignment and Performance, and the t-value of the hypothesized model was significant with a value of 2.34 This indicated that Business–IT Alignment is part of performance which corresponds with the writings of a large number of authors, such as Kaplan, R., & Norton, D. (2000).

Table 11.10 Results of Hypothesis Testing

Hypotheses	Results
H1: There is a Positive Relation between Communication and business – IT alignment.	Supported
H2: There is a Positive Relation between Competency/Value Measurements and business – IT alignment.	Supported
H3: There is a Positive Relation between Governance Measurements and business – IT alignment.	Supported
H4: There is a Positive Relation between Partnership Measurements and business – IT alignment. .	Supported
H5: There is a Positive Relation between Scope and Architecture Measurements and business – IT alignment.	Supported
H6: There is a Positive Relation between Skill Measurements and business – IT alignment.	Supported
H7: There is a Positive Relation between business – IT alignment and Performance.	Supported

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