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IT Infrastructure for Knowledge Management

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Abstract

The relationship between the use of strategic performance measuring strategies (SPMS), organizational learning, information systems (IS) strategic alignment, information technology (IT) information management (KM), competitive use of information resources and organizational performance has been investigated in this study. The researcher used the social science statistics (SPSS) package to analyze the mathematical data. The findings prove that organizational learning and IS strategic alignment have been strongly influenced by SPMS and positively. The methods provided by SPMS as a strategy for communication and dialogue between employees improve the alignment levels of the organization's IS strategy. The results showed that organizational learning and alignment of IS strategies have significant and positive implications for the construction of KM IT infrastructure. Thus, the integration between IS strategy and business strategy through SPMS, appears to improve the targeting and direction of factory members and their interactions improve the construction of IT information management infrastructure.

Keywords

Strategic Performance Measurement Systems (SPMS), Information Systems (IS) strategic alignment, Information Technology (IT) infrastructure for Knowledge Management (KM), organisational learning, competitive applications of knowledge resources

Introduction

Strategic performance measurement systems (SPMS) uses the concept of knowledge management (KM) (Li & Tang, 2009; Hall, 2011). Information Management (KM) refers to the processes of producing, capturing, consolidating, consolidating and transmitting information across an organization to maximize competitive advantages (Fink & Neumann, 2009). Kidwell et. al (2000), emphasizing that the use of information and technology management techniques in higher education is as important as in the corporate sector, identifying some of the potential benefits to higher education institutions when using information management methods. These processes are initiated, monitored and managed by staff. People are known as the ultimate source of information for an organization. The organization receives only limited benefits from distributed information within individuals or between working groups to obtain the full amount of information, these individual employees are transferred to the organization. Masa'deh et al (2017) said that

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experienced management staff can improve performance in an organization. Employee commitment also plays a key role in improving the distribution of knowledge and, therefore, steps must be taken to increase staff commitment so that information sharing activities can improve (Hislop, 2003).

The purpose of information management is for the organization to discuss individual and collective information so that it can effectively use the information it has (Bennet & Bennet, 2003). Information management allows the integration of people, processes and technologies to create values from both intangible and tangible assets. Information management is the ability to manage information such as collecting internal or external information of organizations, transforming them into new ideas or strategies and using them to protect themselves (Gold et al., 2001). Lytras et al. (2002) define information management as an orderly, transparent and effective use of information that will assist organizations to maximize information-related efficiency and benefits from information organizations. Information management (Muttaqi, 2020) allows the integration of people, processes and technologies to create values from both intangible and tangible assets. There are many new business opportunities that can be identified and developed through this integration.

The use of information can be beneficial to a professional employee. In addition, quick and easy access to the required information at any time and under any circumstances to ensure that the required information remains in the right place, in the right format, in a timely manner, and to implement effective and efficient learning processes and to encourage better sharing of information with various stakeholders. most of the existing relationships or create new ones. For example, improved customer relationships will often lead to better customer loyalty and better public visibility. It helps to promote the collaborative effort expected of employees, promotes the further development of human skills through individual or group learning, promotes organizational learning about improved productivity, service delivery and overall outcomes in organizational performance (Skyrme, 2011).

This research paper examined the impact of IS strategic alignment on the effective development of KM IT infrastructure in the company. Appropriate IT infrastructure that satisfies the information needs of the business strategies of the firms built to reflect the impact on the selected firms. KM can be used by firms as processes for identifying, creating, capturing and using organizational information to take advantage of new opportunities and to improve organizational performance. The effects of SPMS and the mediation effects of organizational learning were strongly investigated in IS alignment strategies, SPMS roles and organizational learning in IS strategic planning programs (Bechor, Neumann, Zviran, & Glezer, 2010). Virany et. Al (1992) described organizational learning as a means of reviving knowledge in which managers develop an understanding of the relationship between organizational actions and outcomes. According to this study, the results showed that it has a positive impact on IT infrastructure in the competitive use of information resources. The researcher also investigated to find out the results of their applications in the operation of the organization. Based on the findings, IT infrastructure has been shown to be able to improve the performance of a company through active KM. Editing this paper, the next section shows a detailed process of methods followed by part of the outcome and discussion and finally concluded in the concluding section.

Methodology

The purpose of information management is for the organization to know individual and co-operative information in order to be able to use the information it has effectively (Bennet & Bennet, 2003). The researcher highlighted the factors that investigated the relationship between the use of strategic performance measuring strategies (SPMS), organizational learning, information systems (IS) strategic alignment, information technology (IT), information management infrastructure (KM), competition for the use of information resources and organizational performance as shown in Figure 1.

Figure 1. The relationships among SPMS processes

The explanations for the relationship among SPMS processes are:

1) The impact of SPMS on the alignment between IS strategy and business strategy.
2) The effect on the manufacturing firm's strategic performance through organisational learning.
3) The impact of organisational learning on the levels of IS strategic alignment and also its influences on the adoption of an IT infrastructure.
4) The effect of competitive applications of knowledge resources on organisational performance.

Hypothesis

Hypothesis can be defined as a well-known relationship between two or more variants expressed in the form of proven phrases (Danaeifard, et al, 2009). The researcher listed the research ideas in terms of the relationship between the SPMS processes shown in Table 1.

Table 1. The research hypotheses

Hypotheses	Aspect 1	Aspect 2	Aspect 3
1	SPMS	IS strategy	Business strategy
2	SPMS	Organisational learning	
3	Organisational learning	IS strategy	Business strategy
4	Organisational learning	Business strategy	Business strategy
5	IS strategy	Business strategy	IT infrastructure
6	Organisational learning	IT infrastructure	
7	IT infrastructure	Knowledge management	
8	Knowledge management	Organisational performance	

H2 : SPMS positively affects the authoritative learning of a firm.
H3 : Organisational learning positively affects the arrangement between IS technique and business methodology.
H4 : Organisational learning has an intercession sway on the arrangement between IS methodology and business system.
H5 : The arrangement of IS methodology and business system positively affects the reception levels of IT foundation for KM.
H6 : Organisational learning positively affects the appropriation levels of IT foundation for KM.
H7 : The appropriation levels of IT foundation for KM positively affect the serious uses of information the executives.
H8 : The serious uses of information assets positively affect the hierarchical exhibition of a firm.

The researcher examined the current state of strategic performance management (SPMS) and information technology (IT) infrastructure used in Korean manufacturing firms. 117 firms were eventually included in the study and all were required to answer administrative questions. To collect data, both questionnaires were administered and interviewed by participating firms conducted by the researcher. The researcher selected only production managers or plant managers as respondents and conducted interviews with participating firms. The study lasted three months. Only major production managers or plant managers were selected as respondents to this study.

In this study, twelve questionnaires were used to measure the detection rate of SPMS. Five question items were selected to measure the change in the model of business objectives used. IS strategic alignment was measured on a Likert type seven-point scale, held “strongly disagree” and “strongly agree” using eight questionnaires. Fourteen questionnaires were developed to measure the acceptance and use of IT infrastructure standards including six components used for transfers or collaborations, three storage infrastructure measures and five items used to measure IT usage. Five questionnaires were used to measure the level of competitive requests for information

resources. Eight questions with Duh et al. (2006) were used to measure organizational performance. The researcher has compiled the financial performance methods of the sample firms, such as Return On Assets (ROA) of total operating income and assets, Return On Sales (ROS) for full profits and total sales and Sales Amount per Employee (SAE) to verify external performance measurement. independent operation. In this study, the size and age of the organization were considered as control variables to control the effects of knowledge levels of intensity. There are also other variables, low, medium and high levels that were considered dummy variables in this study.

Results and Discussion

In this study, the study analyzes the properties of Cronbach Alpha coefficients for all multi-component measurements. All Alpha coefficients were greater than 0.9 and by using the 0.4 condition of loading an important object into an object, the results showed that all objects within each index except the IT infrastructure represented the same object. Regression models were used to demonstrate the positive effects of SPMS and organizational learning on IS strategic alignment. Based on these results, SPMS has been shown to contribute to improving IS strategic alignment and enhancing organizational learning. SPMS promotes organizational learning through communication activities, discussions, discussions and evaluation of business strategy topics among members of the organization (Choe, 2016).

A set of rules should be observed and appropriate mathematical strategies should be chosen to analyze the data and translate it into information that can be proven. (Danaeifard, et al, 2009) Based on the analytical data, Hypotheses 1 and 2, which suggest the impact of SPMS, are widely accepted indicating that the alignment between the IS strategy and the business plan is made and carried out through organizational learning. This result also supports Hypothesis 3 which means that it has a positive impact on organizational learning in IS strategic alignment. Increasing the level of strategic alignment of IS, SPMS and organizational learning by SPMS is an excellent way to achieve goals. For these results, Hypothesis 4 is supported. Therefore, it seems clear that organizational learning has mediating effects on IS strategic alignment. These results reflect the fact that SPMS stimulates organizational learning which means that members of the organization can gain a consistent understanding between IS strategies and corporate strategies through organizational learning. These results support Hypotheses 5 and 6 which have shown that IS strategic alignment has had a positive impact on organizational learning. The outcome of the hypothesis is summarized in Table 2.

Table 2. Data Analysis for Research Hypotheses

Hypothesis	**Data Analysis**	
	Aspect	***Impact***
1	SPMS,IS & BS	Positive
2	SPMS & OL	Positive
3	OL,IS & BS	Positive
4	OL & BS	Mediation
5	IS,BS & IT	Positive
6	OL & IT	Positive
7	IT & KM	Positive
8	KM & OP	Positive

The results of IS strategic alignment and organizational learning have been significant and positive in terms of IT retention and search. Only IS strategic alignment has a significant and positive impact on transmission infrastructure. Ideas 7 and 8 were adopted because storage and search infrastructure has a significant impact on the competitive use of information resources. It has had a profound effect on the competitive use of information resources in the company's operations. The results on organizational performance, ROS and ROA are significant and positive in terms of analysis data. From the results, all research ideas were accepted to prove that there was a correlation between the use of strategic performance measurement systems (SPMS), organizational learning, information systems (IS) strategic management, information infrastructure (IT) information management (KM), competitive use of resources and operations of the organization.

Conclusions

In conclusion, this research has proven that there was a positive effect of SPMS on IS strategic planning and organizational learning. This study also strongly demonstrated the mediation power of organizational learning in the alignment of IS strategies. Based on the results of this study, it is concluded that SPMS may contain the activities of influential factors in the alignment of IS strategies. In this study, IS strategic alignment levels are considered to be a major factor in the development of KM IT infrastructure. This study strongly demonstrated the positive effects of alignment of IS strategies and organizational learning on the degree of acquisition of KM IT infrastructure. These results suggest that the concurrent indicators of IT infrastructure development provided by the alignment of IS strategies and the spirit of collaboration between the various departments built through organizational learning, are likely to promote the adoption of KM IT infrastructure (Kuo & Lee, 2009). As the use of competitive knowledge refers to the use of information, which can support the achievement of business strategic objectives, IT infrastructure built and built using high levels of IS strategic alignment appears to have a positive impact on the use of competitive knowledge (Choe, 2016). In terms of results, it has been found that the results of KM IT infrastructure in competitive use of information resources are significant and positive. According to Lambe (2006), information and knowledge infrastructure means that all the elements combine to facilitate the flow of information and knowledge to support multiple tasks and actions and decisions that involve the activities of an organization. In order to make and fully use

information management, organizations must have a clear understanding of how information is created, disseminated and used in organizations (Ipe, 2003; Hooff & Huysman, 2009).

This result supports previous statements regarding the provision of requests for information on the activities of the organization. IS strategic alignment is also considered an important factor in the adoption of KM IT infrastructure (Choe, 2016). In this study, independent methods were used to collect research data that had a negative impact on the strength of the study results which were limited or weak in the study. In future studies, practical steps should be developed and used to strengthen the results of internal and external research. The results of this study are expected to provide benefits to user organizations, the research is expected to be used as inputs so that staff performance is maintained or improved. For researchers, this study is expected to provide a lesson in applying the ideas already adopted in the field of human resource management. Also, in the studies, this study will add details related to the powerful effects of the influence of skills and knowledge management on staff performance as learning materials or an indication of additional research.

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