

Concepts of Strategic Management of Information Technology

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***Abstract.** Strategic management of information technology (SMIT) is closely related to many strategical activities involving IT utilization which are coordinated to achieve organizational goals within a competitive business environment. Along with the dynamics of research development to disclose the strategic roles of IT, previous research proposed various models in relation to how IT contributes to organizational success involving different variables. The difference within models raised some eccentricities since they pointed the same endpoint, organizational performance. This study presents a literature review exploring the general concept of SMIT by mapping each identified strategic factor, configuring the intersection, and discussing a collaborated SMIT models. We conclude three outer layers of SMIT concept, that are SMIT establishment or the environment, significant factors, and a combined model.*

1. Introduction

Generally, Information Technology (IT) is a set of tools that can be divided into two groups including tangible/ hardware and intangible/ software and telecommunication network. IT is in a communicating line with Information Systems (IS) and each definition and significance are recently well recognized, but in short, long before IT was globally modernized and implemented, IS had already been in an organization. Apart from IT, SI is a broader domain part of human language and communication. While IT plays a role to facilitate processes of acquisition, processing, storing, delivering and disseminating information in a digital content [1], [2]. Strategic Management (SM) as a branch within MS taxonomy presents a corporate management approach via a set of integrated and coordinated phases [3]–[5]. The phases in SM are undertaken to transform core competence become competitive advantage [6]. Starting from scientific study conducted in the period of 1960 to 1980, up to now the domain of the study (phenomenon, theory, and methodology) in SM is increasingly growing and expanding including Strategic Management of Information Technology (SMIT) as one of the branch sustaining ease of process of collecting and analyzing systematic data [7]–[11]. This study contributes to highlight some outer layer of SMIT concept that can be used to further studies focused on IT strategic analysis and SMIT model engineering.

2. Method

We reviewed hundreds of research articles and publications from both international journals and conference proceedings focused on IT Strategic Management (or IT strategic planning), IT governance, IT and business strategic alignment, etc., but finalized by 29 main literature. Since this article was a part of a preliminary



investigation to design a further study in SMIT area, the main observed point of this writing was identifying three important concept instruments (the environment where SMIT was formed, significant factors, and models), we applied a simple preliminary design. Firstly, we referred the SMIT general establishment proposed by [12]. Secondly, identifying approach and significant factors studied by 23 literatures, and finally, we mapped strategic variables, correlations and intersection, and endpoints adapted from 5 popular SMIT models presented by previous research.

3. Result and Discussion

3.1. SMIT Environment

The environment of SMIT encompasses four primary layers: organization theory, business strategy, information systems (IS) planning, and IS strategy[13]. Those layers are collaborated to form a strategic formulation containing information strategy, IT strategy, information management strategy, and change management strategy. Meanwhile, the other pivotal aspects emerge from the external environment of the organization, namely changes in the business environment and the development of IT and communication/ ICT (Figure 1).

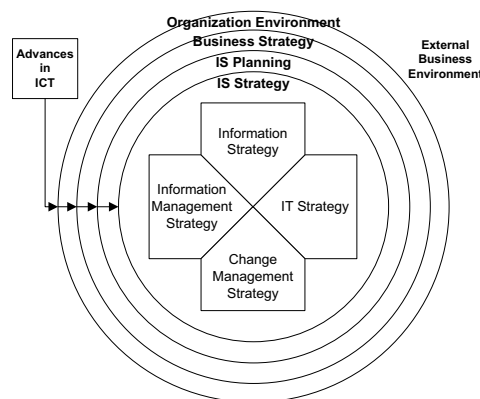


Figure 1. SMIT Environment [12]

3.2. Significant Factors

Most of SMIT research was conducted by some encouragement from a number of factors related to the urgency towards requirement to develop both theoretical and practical. Reviewing 23 main literature of previous research articles from various international universities and research organizations, we found 6 significant factors which were generally backgrounded SMIT investigations. Table 1 shows a list of the significant factors in relation to SMIT sourced from each literature. The significant factors come up from the literature are: IT is empowered as a key investment in the framework of organizational competitive enhancement [14]–[16]; Rapid changes in a global business which is known as hyper-turbulence condition [17]–[21]; Social aspect [22]–[24]; Leadership [25]–[27]; Strategic alignment [25], [26], [28]–[32]; and IT governance and integration [7], [17], [26], [30], [33], [34].

Table 1. Significant Factors of IT Strategic

Reference	Approach	Significant Factor
Bachmann & Zorn (2018); Keeble & Wilkinson (2018); Avgerou & Geoff (2017)	survey	IT as a key investment
Nan & Tanriverdi (2017); Silvius (2008); Gilley, McMillan, & Gilley (2009); Kumorotomo (2012); (26) Latta (2009)	the multilevel perspective of IS strategy; literature review; field assessment; ethnographic analysis;	Hyper-turbulence/ Rapid changes in a global business
Sensuse & Lusa (2010); Hallstedt (2015); Tatnall, Kereteletswe & Visscher (2010)	socio-technical approach; sustainability criteria identification;	Social aspects

Reference	Approach	Significant Factor
Crick & Chew (2015); Dehbokry & Chew (2015); Singh (2013); Erasmus, Parappat, & Weeks (2012); Winter et. al. (2014); Cui et. al. (2015); Wu, Straub, & Liang (2015)	a socio-technical analysis; exploratory literature review; survey; conceptual investigation; the sociotechnical systems (STS); mediation & nomological model; survey; mediation & nomological model;	Strategic alignment (business process and IT)
Singh (2013); Wu, Straub, & Liang (2015); Pirraglia (2012)		Leadership
Nan & Tanriverdi (2017); Erasmus, Parappat, & Weeks (2012); Wu, Straub, & Liang (2015); Schaarschmidt, Walsh, & Kortzfleisch (2015); Lu & Ramamurthy (2011); Durand, Grant, & Madsen (2017)	the multilevel perspective of IS strategy; mediation & nomological model; conceptual investigation; frameworks and empirical analysis; Empirical examination.	IT governance and integration

3.3. A SMIT Combined Model

Figure 2. illustrates a collaborated of SMIT approach based on five different models and different variables. Overall, the models are systematically directed to the same endpoint, level of performance in an organization. However, the differences are clearly shown by the involvement of each variable as the strategic roadmap. With regards to the tracks, the first model is synthesizing a strategic alignment and a competitive advantage as a sequence to organizational performance [35]. There is the same variable for the second and the third models, but for the second is preceded by IT Business Value before ending on the organizational performance, both define a competitive advantage [36][37]. Meanwhile, the last two models are significantly different tracks where the mediation model combine the strategic alignment and agility before connecting to the endpoint [38], and the fifth model assigns the technological innovation which is mediated by the business model to organizational performance, then the relationship between both variables in this model is confirmed by the principle of openness and user engagement in developing the right technology.

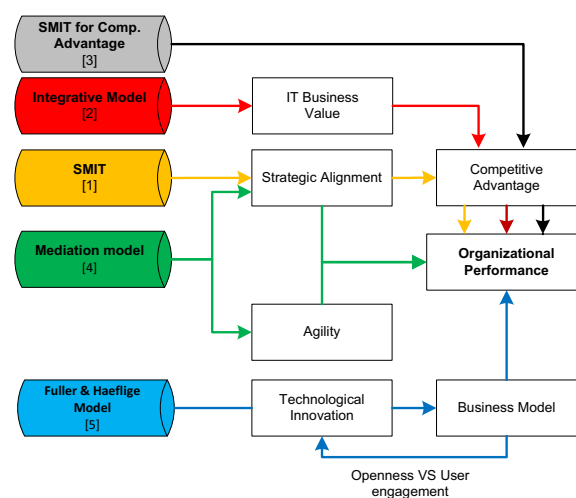


Figure 2. Roadmap in SMIT

4. Conclusion

A general concept of SMIT covers a lot of thought and idea related to its origin, definition, methodology, etc. This article is a preliminary study relating to the model development for the further study in SMIT. In accordance to our findings of three basic perspectives of SMIT (environment, significant factors, and a combined SMIT roadmap), this outer layer of concept motivates the author in designing next phases including procedure, documentation, and impact of the study.

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