

BUSINESS-INFORMATION SYSTEMS STRATEGIC ALIGNMENT READINESS MATURITY LEVEL: CORPORATE AND BUSINESS-TECHNOLOGY DRIVER PERSPECTIVE

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Abstract

Alignment between business and information system strategies is considered as an important aspect that brings critical information for many determining indicators of the undertaking organisation. Relevant to the statement, this study used Strategic Alignment Maturity Model (SAMM) as the basis for determining the utilization level of information systems in the overall business operations. Instruments-designed preparation and description of strategy recommendations were determined through expert judgment. Software was designed to facilitate the assessment process and automate recommended strategy is needed as the result. Through this software, organisations were able to find out the position and level of information systems align with business objectives while they were also able to find out recommendations for developing future strategic plans based on their performance situation with a focus on their critical areas. Lastly, we also conducted a conformity analysis with the idea of business and technology driver in information system strategic planning. The results are useful for strategic planning. Therefore, determining the level of readiness by using a more serious combination of SAMM with business/technology driver would be a further study to be focused.

Keywords: Business/ technology driver, Information system strategic planning, Readiness level, Strategic alignment maturity model.

1. Introduction

The use of information systems (IS) will be more effective when there is a planning process before the system gets implemented. Strategic planning is now recognized as an issue about the critical competitiveness in the company [1]. Gottschalk and Taylor [2] explained that the purpose of business and information technology (IT) alignment is not only relating to achieving competitive advantage and overall goals but also very important for the survival of the organisation. It expectedly will also have an impact on improving company performance [3]. The process of integration between information technology and business is the most important factor, especially in the implementation process [4], and it will be connected with performance [5].

Continuously, IS planning problems are claimed to be not easy to do. Even, they are a long process. The problem of the implementation of IS can be caused by the wrong planning process, where the elements involved in the planning process are only in the top management section without any connection with other elements and also without an analysis of the organisation's current conditions.

According to Bendoly et al. [6], when the growth of business organisations becomes the main challenge, it requires managers who are able to utilise the capabilities of IS / IT in carrying out routine coordination. Meanwhile, if the making of IS has been in line with business strategy, it is then considered successful [7]. Alignment of both business and IS are one of the important aspects to be considered, and become part of the organisation's efforts to utilise IS applications to improve efficiency, business processes re-engineering, gain competitive advantage, and compete more effectively [8]. On the other hand, it can be used as a basis for determining organisational readiness in implementing IS [9]. Based on studies by Hell et al. [10], determining the strategies, which is in line with the level of readiness of the organisation is somehow important to do.

The assessment of IS and business alignment is an important step in identifying specific actions, which are needed to ensure that IT is used to activate or encourage business strategies appropriately [11]. Criteria for determining the level of organisational readiness through this alignment process are known as the Luftman Model [12]. The maturity level used is a core concept of the Software Engineering Institute's Capability Maturity Metric (CMM), focusing on IS-business alignment [13]. To determine the alignment maturity level of an organisation, the scores of the six factors of maturity are compared to a five-level maturity model shown in Fig. 1.

Level one is the lowest, and level five is the highest maturity level. The five levels shown in Fig. 1 are defined as Level 1: Initial or Ad Hoc Process: Business and IT are not aligned or harmonised; Level 2: Committed Process: The organisation has committed to becoming aligned; Level 3: Established Focused Process: Strategic Alignment Maturity is established and focused on business objectives; Level 4: Improved or Managed Process: IT has been reinforced as a value centre; Level 5: Optimized Process: The organisation has integrated business-IS strategic planning.

This assessment is considered to be more comprehensive and is very applicable for any fields of organisations' usage [9]. In several related studies, this assessment used descriptive models using the average measurements [13-15]. The Strategic

Alignment Maturity Model (SAMM) has been widely used to measure whether IT/IS utilisation conditions fit the business planning. In a case study on an Iranian telecommunications company, SAMM was used as the basis of the conceptual model to determine the level of readiness of the organisation's strategic alignment process [9]. By considering the Corporate decision-making level and the project IS implementation level, SAMM was adopted to establish the alignment of the maturity levels of Kenyan public universities [15].

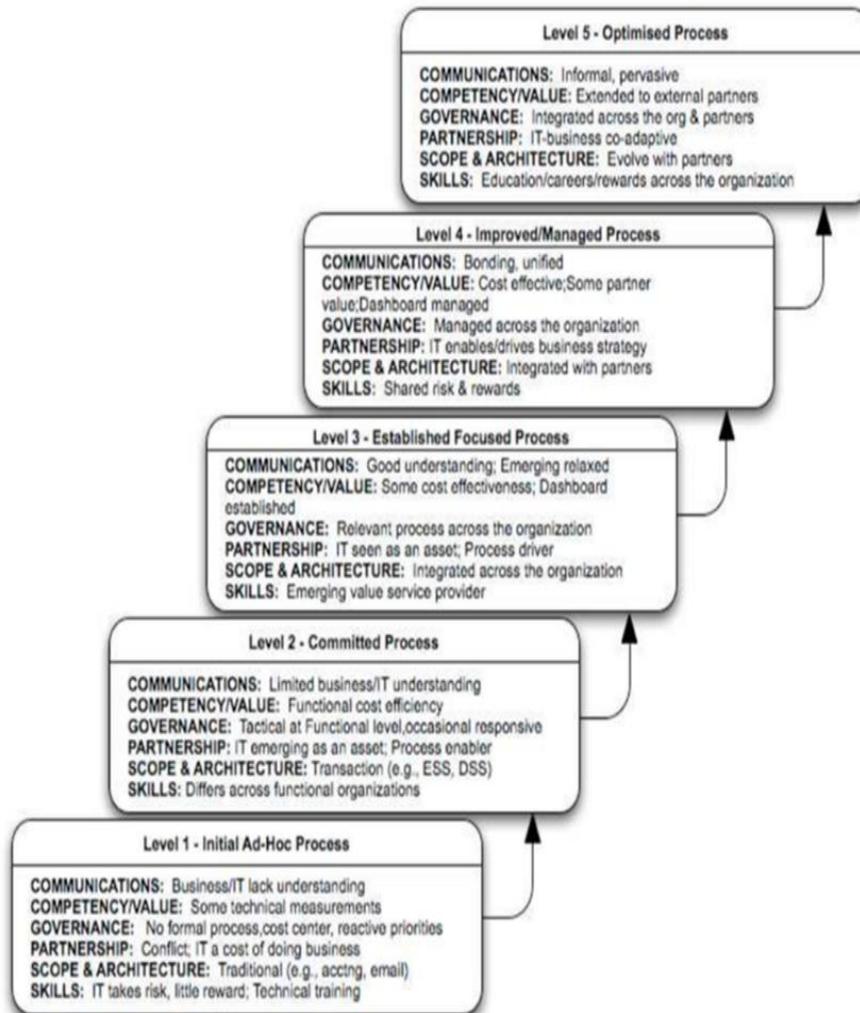


Fig. 1. SAMM criteria adopted [12].

The six factors in SAMM carried out statistical analysis, which were to determine the pattern of relations between business and IT alignment with organisational performance. And, research results indicated that Business -IT Alignment is part of performance [16, 17]. Strategic planning research relies on common vision with various stakeholders. It suggests formulation of a list of

important business and technology drivers that are owned, along with their respective implications for IS strategy planning solutions [18].

The aim of the present research was to contribute the research report in the field of strategic alignment theory and information system strategic planning in general, which is an important aspect in achieving the IS effectiveness in organisations since it explores alternative ways to build organisational alignment maturity by considering the emergence of business-technology drivers in strategic planning. However, most previous studies have always considered the use of SAMM and its variation in determining the level of readiness of the organisation's strategic alignment process [9, 16, 17].

2. Conceptual Framework and Method

2.1. Conceptual framework

Luftman [12] proposed that the strategic alignment assessment tool was used to assess alignment maturity at the corporate level is the validated instrument and strategic recommendation by expert and based on SAMM. Meanwhile, the business-technology drivers were adopted from literature [18-20]. The following diagram in Fig. 2 depicts the conceptual framework adopted in this study. Assessment of alignment is completed at the corporate level, followed by the idea of business-technology driver analysis in strategic planning. The overall organisational IS strategic maturity alignment level is the combination of both.

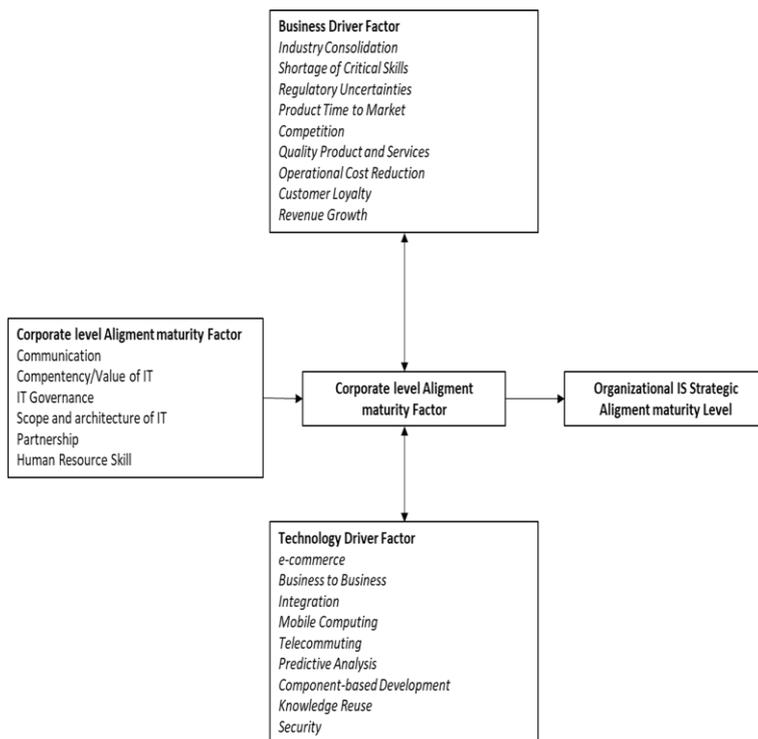


Fig. 2. Conceptual framework.

2.2. Determining strategy recommendations

The assessment instrument and strategy recommendations are validated by the expert. The expert needs to test whether the questions posed to the respondent can be understood and do not cause ambiguity to the respondent. Apart from that, the strategy recommendations at each level are updated and the expert examines whether the strategy recommendations compiled based on SAMM are appropriate and have the right meaning to form the basis of the strategic plan.

2.3. Obtaining a measurement value

To obtain a measurement value that is in accordance with the range of existing values, the average model is not enough. Standard deviations and averages are used to describe data in various centers.

2.4. Measurement of maturity level process

In this process, the questionnaire value data has been obtained. The data were then stored in the application database, which will be used as data input in the process of measuring maturity values. The process of measuring maturity value is divided into two processes, namely the process of measuring the maturity value of all factors as corporate alignment maturity level and the process of measuring the maturity value of each factor.

2.4.1. Measurement of all factors assessment

The measurement of maturity values on all assessment factors is done by the average method to see data trends. Accordingly, the organisation can find out the value of overall corporate alignment maturity level.

2.4.2. Measurement of each factors assessment

Using the same method in calculating the overall maturity value, it was obtained the size of the maturity value of each factor from each indicator in the assessment factor as a reference for preparing strategy recommendations.

2.5. Automated workflow

A workflow software tools models are generated to automatically determine the level of business strategy alignment as shown in Fig. 3. The numbers of respondents joined during the simulation process with the software were 27 respondents from one of Indonesian public organisation namely National and Political Unity Agency (Bakesbangpol) of Cianjur Regency.

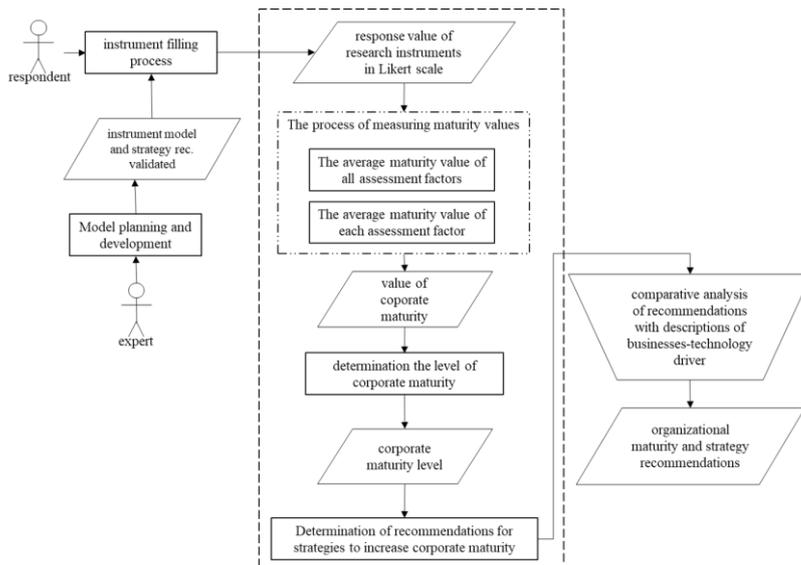


Fig. 3. Software workflow design.

2.6. Analysis with business-technology drivers

The use of SAMM in assessing the level of the establishment is in line with corporate strategies and IS strategies. It was then analysed by the idea of business-technology drivers in strategic planning.

3. Results and Discussion

The simulation result is shown in Table 1. The alignment value obtained in the overall factor is 2.90. The highest score (the communication factor) is 3.40, and the lowest is 2.73 in the partnership factor. It can be seen in Table 1.

Table 1. Alignment maturity factors.

Factor	Factor alignment maturity level
Communication	3.04
Competence and IT value	2.86
IT governance	2.94
Partnership	2.72
Scope and architecture	2.98
Human resource skills	2.87
Alignments maturity scores	2.90

The factors and indicators that must be considered are displayed in Fig. 4. The simulation results showed that communication scores, IT governance, and IT architecture are at a safe score while competence, partnership, and human resource skills are below the organisational alignment score. Strategy recommendations are determined based on factors that are under the organisational alignment score.

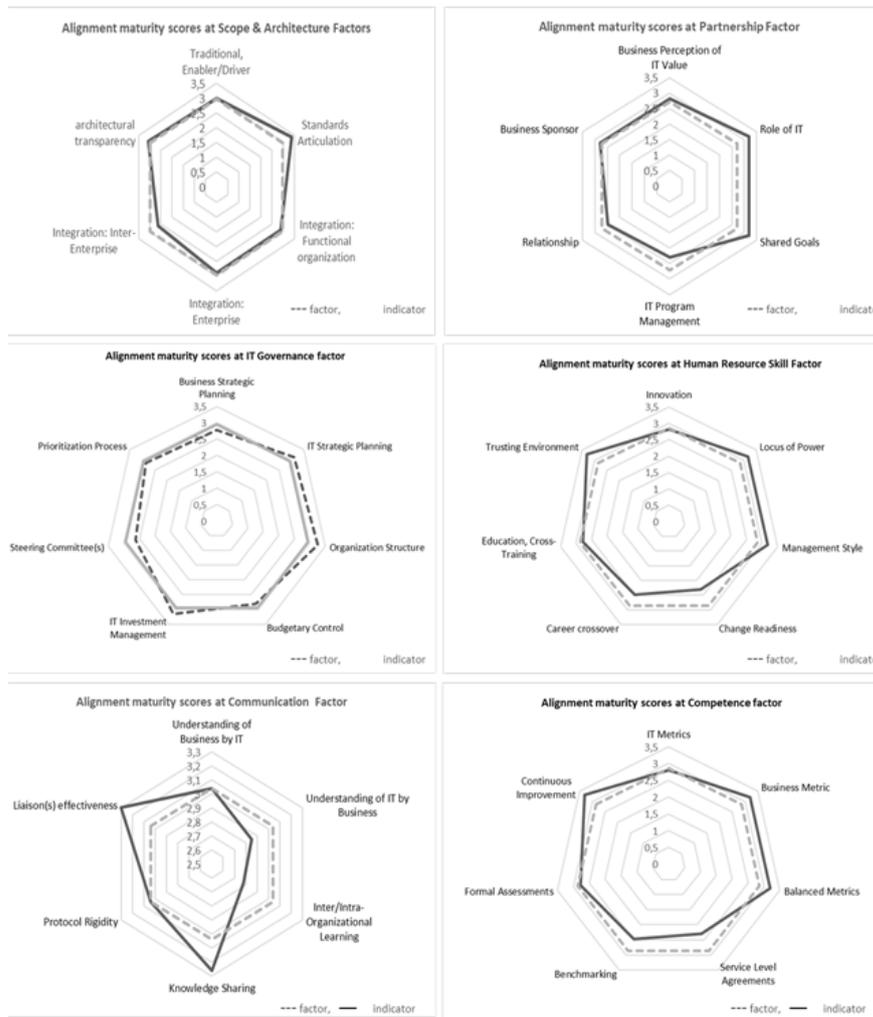


Fig. 4. Alignment maturity scores factor need to considered.

Table 2 is the analysis of each indicator of the competence, partnership and human resource skills factors towards the idea of the business-technologies driver. The analysis is based on perceptions of similarities in keywords and description of strategy recommendations with business-technology drivers. Table 2 is an analysis for competency factor towards the idea of business-technologies driver.

Analysis of partnership factor towards the idea of business-technologies driver is shown in Table 3, whereas analysis of human resources skill factor towards the idea of business-technologies driver is shown in Table 4. Analysis of IT governance factor towards the idea of business-technologies driver is shown in Table 5. Then, analysis of communication factor towards the idea of business-technologies driver is shown in Table 6.

After comparing the strategy recommendations as a result of SAMM with business/technology driver concept, there were 10 perceived the same out of the 18

driver components. The ten lists are described in the Table 7. However, it was not necessarily articulated as a discrepancy since not all the results of the score are the strategy recommendations. It was found that not all of the business/technology driver components appear so that it is considered appropriate to say that the ten components are also worth the attention.

Table 2. Recommendations for competency factor strategies.

Appropriate business/technology driver	Similarity of purpose with recommendation
Technology driver: Business to business	It is important for organisations to make IS/IT a business driver, so as not to view IS as a complementary business to organisations
Business driver: Cost reduction	Creating a more efficient performance appraisal, to reduce the operational costs of the organisation in the future
Technology driver: Knowledge reuse	The aim is to improve the understanding of organisational members, activities to increase understanding to share knowledge they have
Technology driver: Component-based development	The importance of making IS/IT a top priority in carrying out organisational business processes as part of the organisational commitment. Thus, the system development does not always start from the starting point again. Rather, it can utilise existing systems/procedures, if appropriate
Business driver: Shortage of critical skills	It is important for organisations to be able to improve the capabilities and understanding of their members. Organisations can provide the same role for managerial and IT managers in terms of their contribution to the organisation's business processes

Table 3. Recommendations for partnership factor strategies.

Appropriate business/technology driver	Similarity of purpose
Technology driver: Knowledge reuse	It is necessary to increase the understanding of organisational members by involving parties related to strategic planning along with IT managers in planning IS strategies
Technology driver: Telecommuting	Take advantage of IT for collaborative management by creating online groups for the communication process. With the existence of this online group, the process of communication between units within the organisation is easier to do
Technology driver: Integration	The main objective is for organisations to optimize their application architecture by integrating functions and data, so that operational costs for the IS architecture can be reduced
Business driver: Industry consolidation	Organisations need to set standards for enterprise architecture

Table 4. Recommendations for human resources skill factor strategies.

Appropriate business/technology driver	Similarity of purpose
Technology driver: integration	Optimise the application architecture by integrating functions and data, so that operational costs for the IS architecture can be reduced
Business driver: industry consolidation	Organisations need to set standards for enterprise architecture
Technology driver: knowledge reuse	The aim is to increase the understanding of organisational members, activities to increase understanding by involving IT managers in determining IT investments with the concept of knowledge reuse

Table 5. Recommendations for IT governance factor strategies.

Appropriate business/technology driver	Similarity of purpose
Business driver: Quality product and services	Policies are needed to regulate IT investment plans and IS projects can be directed as part of organisational strategy to be stable and able to improve the quality of services and products provided
Business driver: Competition	Create special programs to accommodate the idea of using IS driven because of a dynamic business environment. To go beyond the products and services carried by competitors as a solution needs innovative and creative ideas
Business driver: Cost reduction	Management of IS/IT investments can be determined together through the existence of a steering committee. As a result, the organisation does not need to spend operational costs on the form of projects that are not in accordance with the objectives of the organisation

Table 6. Recommendations for communication factor strategies.

Appropriate business/technology driver	Similarity of purpose
Technology driver: Business to business	The importance of organisations to see the role of IS as a driver of organisational business processes

Table 7. Appropriate business/technology driver strategies.

Business driver	Technology driver
Industry consolidation	Knowledge reuse
Quality product and services	Integration
Competition	Telecommuting
Cost reduction	Component-based development
Business to business	
Business to business	

4. Conclusions

The use of SAMM (as a basis for determining the alignment level between business and IS) is quite comprehensive and represents all aspects. However, adding or combining it with other perspectives such as business-technology drivers will add value to its effectiveness. This research is part of a new approach in determining the maturity alignment of IS and business by looking at the overall organisation as a whole. In particular, using this approach will ensure organisation to identify weak areas that need improvement to achieve better overall organisational strategy alignment and therefore, value from the business-technology driver as well. In the future, business-technology drivers can be directly arranged as separated material for determining the level of maturity without involving SAMM. It should be considered for added management and customer expectation as the third driver. This research shows that the recommendations produced can be in line with business and technology drivers so that developing instruments to complement existing indicators can be a good choice in the future onwards. In addition, it captures the issue of the uncertainty of the business environment into the model to facilitate understanding.

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