A Combination Model Using BSC-Strategic Alignment for IT Mapping Strategy in Banking Industry (Case study: Pasargad Bank)

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ABSTRACT

A number of attempts have been made to define strategic business and information technology (IT) alignment; several representations of what it is are available in academic and practitioners’ fields. The literature suggests that firms need to achieve strategic business and IT alignment to be competitive. In this regard, the strategic alignment model is recognized as the major trend in making levelling off between business areas and the IT. Also, the balanced scorecard (BSC) and strategy map are considered as powerful tools for managing strategies and as supportive systems for decision making in field of strategic management, short-term purposes, and making balance among external stakeholders and internal factors. Thus, in the current paper, We propose a unified strategic business and IT alignment model based on four strategic business and IT alignment models: Strategic Alignment Model (SAM), Strategic Alignment Maturity Model (SAMM), information system strategic alignment model and an operational model of strategic alignment.

INTRODUCTION

Information technology (IT) involves computers, software and services, but good IT must synthesize these elements to achieve the goal of an organization. As a demand to collect, process, store, and disseminate information grows, the functions of IT department is becoming increasingly important. Although businesses invest huge amount of intellectual and financial capital in a range of communication and information technologies and services, the results of some surveys revealed that some companies have started to freeze IT budgets because there are insufficient evidence of a return from the investments and IT applications seem to be simply a black hole [21].

Strategic business and Information Technology (IT) alignment (henceforth referred as strategic alignment) has many synonyms such as alignment, harmony, linkage and business – IT alignment. In the literature, we identify numerous definitions of strategic alignment. Tall on and Kraemer (1998) define strategic alignment as the extent to which the Information System (IS) strategy supports and is supported by the business strategy. Silvius (2007) defines strategic alignment as the degree to which the IT applications, infrastructure and organization, the business strategy and processes enables and shapes, as well as the process to realize this. Reich and Benbazat (1996) define strategic alignment as the degree to which the IT mission, objective and plans support and are supported by the business mission, objectives and plans.

In the article written by Maes et al 2000; they define strategic alignment as a continuous process— involving management and design sub-processes— of consciously and coherently interrelating all components of the business-IT relationship in order to contribute to the organization’s performance over time. Luftman (2000) argues that strategic alignment refers to applying information technology in an appropriate and timely way, in harmony with business strategies, goals and needs. Henderson and Venkatraman [14] state that strategic alignment is defined in terms of four fundamental domains of strategic choice: business strategy, information technology strategy, organizational infrastructure and processes, and information technology infrastructure and processes. We define strategic alignment as a continuous process which involve interrelating the coherent
combination of the four fundamental domains: business strategy, IT strategy, organizational infrastructure and process, and IT infrastructure and process in order to contribute to the organization's performance.

For two decades, strategic alignment has consistently appeared as a top concern for IT practitioners and company executives and it has been constantly and repeatedly ranked as the most important issue facing corporations since the mid-1980s. Despite the importance of strategic alignment, there is debate in the literature about what strategic alignment actually is [4].

By editing strategies, planning integrity, and making purposes more accessible, we could set this structure as the basis for strategy management. Also, this structure will lead to making review in every step of management through obtaining feedback. In regard to this fact that this structure will be established according to balanced scorecard (BSC), we could call it the basis for evaluation of organization’s performance, units and various projects. For the next step, the most casual strategies are selected through analyzing of these strategies.

A review of research literature:
IT strategic planning:
In today's world, IT and its supporting organization are a symbol of the most valuable assets. Successful organizations have found the benefits of IT and have used it to promote values for beneficiaries (Stewart, 2007). These organizations also understand the related risks and manage properly. Need to ensure about the value of IT, risk management related to IT and the increasing need to control information are currently considered as key elements in the leadership [4]. IT strategic planning is a logical and step-by-step, timing and targeted process that in it, an organization starts from a beginning point for developing a strategic plan for own IT and after passing the steps which are related together, it can beLogin Successful IT organizations to organization [5]. This process is a systematic, targeted, and codified process in macro and strategic goals, to develop IT in organizations for supporting the goals and activities of organizations [22]. Generally, IT strategic planning is one of the critical components of business performance. Wilkin and Cerpa (2012) investigated the practice and effectiveness of strategic IS planning as a function of strategic management in 29 large Australian organizations.

Results of their research showed that IT strategic planning was widely used in these 29 organizations in aspects such as planning associated with strategic IS investment and application. Newkirk et al. (2008) tested the effect of business and IT change on strategic IS planning on the alignment of IS strategy and business strategy.

Alignment of business strategy and IT strategy:
The strategic alignment model (SAM) proposed by Henderson and Venkatraman is one of the most cited strategic alignment models. SAM is composed of two main dimensions: strategic fit and functional integration. Strategic fit refers to the concordance between internal and external domains.

Functional integration refers to two type of integration between business and IT domains. The first type is termed strategic integration and reflects the link between business strategy and IT strategy. The second type is termed operational integration and deals with the link between organizational infrastructure and process, and IT infrastructure and process [14]. SAM is a conceptual model that it has been used to understand strategic alignment from the perspective of four components, i.e. Business Strategy, IT Strategy, Organizational Infrastructure and IT Infrastructure, and their interdependencies.

Yolande Chan empirically investigated strategic alignment and its effect on other components in the organization. Chan examined the relationships among Information System (IS) strategic alignment, IS effectiveness and business performance. It depicts the proposition that the relationship between the business strategy and information system strategy is directly related to IS strategic alignment. It is also directly relates to IS effectiveness and business performance.

In the article written by Chan & Huff in 1993, they proposed an instrument based on the comparative approach to assess the realized information strategy of the organization.

This instrument was based on Venkatraman's Strategic Orientation of Business Enterprises (STROBE) instrument which assessed the realized business strategy. The instrument was called Strategic Orientation of Information Systems (STROIS). Both STROBE and STROIS used the same eight dimensions of strategy.

The BSC:
In recent years, the BSC has emerged as the primary tool for performance measurement by Kaplan and Norton that its goal is to reveal the problems and focus on areas of improvement within the organization for implementation of the strategies [18]. Also, BSC offers the framework for alignment between the organization’s forces, institutional investors, and information with strategies [18].

The balanced scorecard is a strategic planning and management system that is used extensively in business and industry, government, and nonprofit organizations worldwide to align day to day activities of employees to the vision and strategy of the organization, improve internal and external communications, and monitor organization performance against strategic goals. Balanced scorecard has evolved from its early use as a simple
performance measurement framework to a full strategic planning and management system. The “new” balanced score card transforms an organization’s strategic plan from an attractive but passive document into the "marching orders" for the organization on a daily basis. It provides a framework that not only provides performance measurements, but helps planners identify what should be done and measured. It enables executives to truly execute their strategies.

Traditional evaluation systems were mainly based on financial measures but the balance devaluation method shows that successful organizations to evaluate their performance not only on financial measures [10]. First, the traditional evaluation system that includes financial indicators will be adapted with the BSC that promotes the organization’s vision. Then, the BSC as a holistic performance evaluation system provides relations between non-financial indicators (as the stimulus) and financial indicators (as the final output) [15]. For example, it clearly and explicitly says that non-financial indicators effects will have based on the strategy [24]. Hence, the BSC can be used as a strategic management system. The BSC consists of four perspectives as follows [26]:

1. **Financial perspective**: financial measures indicate whether the company’s strategy and its implementation and enforcement will ultimately lead to improved financial goals. Common financial goals are profitability, growth, and increased value for share holders.
2. **Customer perspective**: good customers enables the organizations that measure and improve the main criteria for assessing the status of customers such as satisfaction, loyalty, maintain, acquire new customers and etc.
3. **Internal processes perspective**: successful performance in customer perspective comes from the processes, decisions, and acts that occur within an organization.
4. **Growth and learning perspective**: on learning and growth perspective, the goal is providing infrastructure and other resources that make possible the goals of the organization in other ways. A company’s ability to innovate, improve and learn has relation with values of the company directly.

The BSC has been used in various research works for strategy planning and performance evaluation in different fields such as short-term planning for private universities evaluation framework for knowledge management systems, management of supply chain flexibility and so on [24].

**Strategy map:**

Kaplan and Norton [18] presented the next developing in the BSC. The strategy map is a tool to describe the strategy and its logic. This map provides a framework for mapping and management strategy for managers in the era of knowledge economy. The strategy maps help organizations to see their strategy in a coherent, integrated and systematic form [34]. Strategies plans show relations that certain reforms will lead to desired outcomes through them [31]. From this perspective we can say these maps how the motives and resources of an organization (including intangible assets such as corporate culture and knowledge workers) become tangible gains [33]. Creating a strategy map makes the organization to identify the logic of value creation and its audience [32].

**Methodology and implementation stages of the research model:**

Research is done in terms of categories based on objective research; applied research is intended to transfer the scientific findings of fundamental research to technology field. But in terms of how to collect data and descriptive type of research is a case study of the branches.

The collecting data tool is a questionnaire. The method of collecting data in the questionnaires is the DELPHI method. To determine the validity of questionnaire was used of the Cranach’s Alpha coefficient. That according to this that the calculated coefficient is equal to 0.714, then its stability can be confirmed.

Sampling in this study is simple random and was used formula (1) for experts:

\[
 n = \frac{(Z_{\alpha/2})^2 \times pq}{(E)^2}
\]

So the sample size required for 96 experts.

To establish a strategic fit between the internal and external business, using the BSC seems appropriate, because BSC has a documented and targeted approach for translating strategy into operation. Using the BSC allows aligning organizational processes and infrastructure in business with strategy and competitive position in the organization and also developing action plans with specific standards and measures to achieve this purpose. Thus, to establish a strategic alignment with the BSC, a strategy map is necessary for each of the areas of business and IT. Establishing these two maps (one based on the main framework of the BSC and another based on the balanced evaluation method for IS) ensure us that all components in the strategic alignment model have been studied and have taken place in the strategy map. Also, these two frameworks ensure the establishment of strategic fit in any of the areas of business and IT.
The strategic fit is created through the cause and effect relationships between the four perspectives and is brought in the strategy map. As a result of cause and effect relationships, the issue of integration of the operations – influence the taken decisions in the field of IT in business decisions and vice versa- will also be established.

As can be seen, the proposed method was for providing strategic alignment completely based on the BSC and used thought for establishing the framework is based on the strategy map and BSC that is offered by Kaplan and Norton [18]. However, in the framework, with simultaneously involving both business and IT strategies and in a strategic structure, and through the causal and logical relationship between the discussed strategies in the strategy map, the strategic alignment is created that is base of this framework. This can be argued that the proposed framework is the complementary method of Kaplan and Norton’s BSC and BSC framework of IS. These statements are general guidance for policy formulation and strategic orientation organization.

These programs can have broad guidelines in different areas such as a merger with rival or supplement companies, purchase the license, collaboration between business, entering new markets and etc. It should consider the full and accurate understanding of the external environment, the competitors, the market position, future analysis of the market, the technology, and modelled it out which are the main tasks of this step. The next step and after the swirl of macro policies, strategies have been developed in four perspectives of the BSC and in two areas , ‘business’ and ‘IT’ and causal and effect relationships are established between them. For developing Strategies, it is necessary for at least the first stage that the analytical tools are used in strategic planning such as SWOT analysis.

These tools will allow planners to develop the basic core of the organization’s strategy based on internal factors (strengths and weaknesses) and external factors (opportunities and threats), the vision, macro policies, the strategic orientation, the key factors of success, and etc. In the next stage, these strategies will be transferred into four perspectives of BSC and found self-position in the organization’s strategy map.

Afterwards, the causal and effect connection between the developed strategies will be done. This process will assist planners to identify new strategies for the realization of the previous strategies are needed and put them in proper place. Each strategy or plan in the strategy map must be supported by strategy or program in lower perspectives and in practical, strategies and programs at the lower levels cause to achieve strategies at a higher level.

Table 1: Methodology and implementation stages of the research model.

<table>
<thead>
<tr>
<th>Perspective</th>
<th>Target</th>
<th>Key question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial</td>
<td>Improve financial results by providing value to shareholders</td>
<td>How achieve financial success from the perspective of shareholders</td>
</tr>
<tr>
<td>Customer</td>
<td>Create value for customers by offering products and services</td>
<td>How reach to the vision of customers</td>
</tr>
<tr>
<td>Internal processes</td>
<td>Improvements in operational processes in order to create differentiation and increase the efficiency and effectiveness</td>
<td>Which processes must be excelled to keep customers and shareholders happy in the work</td>
</tr>
<tr>
<td>Growth and Learning</td>
<td>Strengthen the capability of innovation and change through continuous improvement and readiness for future</td>
<td>How can change and improve power to achieve a vision</td>
</tr>
<tr>
<td>Business Value</td>
<td>Create increased business value</td>
<td>How IT helps to the organization gain to goals and value-added</td>
</tr>
<tr>
<td>User</td>
<td>Provide value-added products and services to end user</td>
<td>How IT products and services provides customers’ needs</td>
</tr>
<tr>
<td>Internal IT</td>
<td>Provide effective and efficient Products</td>
<td>How IT maintain and provide their products and in efficient way</td>
</tr>
<tr>
<td>Preparing for the future</td>
<td>Provide continuous improvement and preparation for future issues</td>
<td>How IT department improve their products and be prepared for future changes</td>
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</table>

Data analysis and research results:

In this section, the findings of using suggested pattern is checked in the Pasargad Bank. Thus 27 branches

Create strategies and establish the causal and effect relationships and develop a strategy map:

These results are obtained based on the findings of the SWOT analysis. First, the strengths and weakness of the centre are determined for the analysis and identified opportunities and threats to the environment. Then, the next step based on these, strategic approaches are presented.
Table 1: SWOT analysis.

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
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<tbody>
<tr>
<td>• Very talented and motivated workforce</td>
<td>• Lack of targeted marketing process</td>
</tr>
<tr>
<td>• The existence of human resources with knowledge and expertise</td>
<td>• Lack of proper definition working conditions with partners</td>
</tr>
<tr>
<td>• Having credibility in the field of network security</td>
<td>• The impossibility of continuing education with suitable conditions</td>
</tr>
<tr>
<td>• For development and maintenance of quality manpower</td>
<td>• Lack of continuing education</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>• A positive approach of customer to consulting of company</td>
<td>• Leave the trained and experienced work force</td>
</tr>
<tr>
<td>• Public attitudes to the use of IT and infrastructure initiatives in this area</td>
<td>• Lack of foreign partners in the project due to sanctions</td>
</tr>
<tr>
<td>• Deposition of knowledge in the field of network security</td>
<td>• Dissemination of knowledge and expertise to the company’s competitors</td>
</tr>
<tr>
<td>• Less sensitive to environmental changes</td>
<td></td>
</tr>
</tbody>
</table>

After the SWOT analysis, the initial core for developing strategies, formulate strategies are moved to the strategy map. With study of needed causal relationships and the effect of each strategy, the strategy map is completed and each strategy is placed in proper self-perspective (Figure 1).

Conclusions:

The BSC has been utilized extensively in various fields, so as in the IT/IS field. Kaplan and Norton [19] use an IT-company as an example to illustrate the use of the BSC by establishing a BSC framework, selecting a number of metrics, and setting a number of targets for top management. Willcocks and Lester (1994) tailor the BSC framework to the specific needs of IT investment evaluation in a major European ferry company. Martinsons [21] and Martinsons et al. [21] suggest the use of BSC to help managers evaluate IT investments and the performance of IS organizations, in a holistic manner. Abran and Buglione [1] argue that the traditional BSC cannot integrate the perspectives automatically into a consolidated view and thus the frameworks do not tackle the contribution of each goal to the whole BSC.

In this research we proposed a unified strategic alignment model based on the components of four well know strategic alignment models: Strategic Alignment Model, Strategic Alignment Maturity Model, information system strategic alignment model and a operational model of strategic alignment proposed. The unified strategic alignment model differs from others strategic alignment models in the sense that it search reconcile some strategic alignment models instead of propose a new one without take inconsideration the components of the existences of some well know strategic alignment models in the literature. The presence of these four models in one model enrich the strategic alignment field. It means that the unified strategic alignment model is more complete and broad in the representation of the knowledge in the domain of the strategic alignment.

As was stated in our goals, our intention is to construct a unified strategic alignment model. To do this, we used the notation of the EID and the method for generating it. The EID is used as a means for presenting and comparing theories and models from existing literature. The intent of using the method for generating EID was to facilitate the construction of the four models that are part of the unified strategic alignment model. We added one step to the method for generating EID to merge the four strategic alignment models and construct the unified strategic alignment model. This model contributes to a better understanding of the nature and key aspects of the strategic alignment from some complementary theories.

During the construction process of the unified strategic alignment model, we identified similar components between the four strategic alignment models and at the same time, we identified differences components between the four strategic alignment models but all the components of the unified strategic alignment model are complementary in the domain of strategic alignment. In the unified strategic alignment model, we have conceptual model and other models are oriented to evaluate the strategic alignment. The SAM is a conceptual models however the other models are more oriented to practical issues.

Therefore, with study the BSC approach, this model is appropriate to implement and operate the strategic alignment model based on this method’s approach that makes Aligned of organization in lower and internal layers with strategies and foreign region of organization. Unfortunately, a large number of Iranian companies that are active in IT field do not take the advantages of IS strategic alignment concept. Only there are a few studies that investigate relation between business strategies and is strategic alignment, and business performance.
in Iran. Therefore, the main contribution of this study was proposing a combination model using strategic alignment model and BSC in a case study.

**Fig. 1**: Map of the Pasargad bank’s strategic alignment.

**REFERENCES**


