

# BALANCED SCORECARD FOR ALIGNING IT STRATEGY WITH BUSINESS STRATEGY IN AN ENERGY COMPANY

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**Abstract.** In this paper, we look at the use of the Balanced Scorecard and how it can be used to align IT strategy with business strategy in an energy company called ABC. We can use Henderson and Venkatraman research on Strategic Alignment Model and link it with Balanced Scorecard defined by Kaplan and Norton and different variants such as IT scorecard. This paper presents a case study in analyzing alignment between information technology department and business at an energy company in Indonesia. The design of IT department BSC serving an energy company will be described and discussed. IT department is categorized as shared supporting group in this company. ABC Business Unit is one of biggest energy producer in Indonesia and IT department is playing an important role to achieve business strategy. We related Balanced Scorecard with their current strategies, objectives, targets and measurements on both the business and IT sides of the company to see if they have alignment between business and IT. The results of the case study analysis consist of a review against strategic alignment model and against a Balanced Scorecard. Future alignment research could take other method than balanced scorecard to analyze alignment between IT and business. In the future, it can also consider other energy company outside Indonesia so that it can cover a wider range of industry types, especially in energy industry

**Keywords:** Alignment, Balanced scorecard, Measurement models, IT management

## Introduction

Survival not even success has become a major challenge in today's turbulent and competitive business environment. The basic foundation strategy that any type of business should follow is to align Information Technology (IT) with business strategies. A company should have clear business strategies and utilizes its IT system to accomplish company's objectives. In addition, IT has become the crucial infrastructure of any company, the backbone for corporate information flow and the enabler or driver of business processes.

Many questions arise from business team regarding to business value generated by IT investments or expenses. That is the background that IT should measure its productivity to the business. The Balanced Scorecard (BSC) provides a methodology for measuring the value that IT achieved (Kaplan and Norton 1996, Maisel 1992).

Many contextual factors and forms part of the overall information system context influence the concept of value itself. Cronk and Fitzgerald (1997) states that "As the varying perspectives on value may moderate both the 'actual value added to the organisation' by the information system and 'the value uncovered by the evaluation process' they need to be included in appraisal techniques". It recently kindled a heated debate on whether "IT matters" to companies anymore because of the difficulty in managing and getting value out of IT.

Practitioners and researches have long observed the importance of IT-business alignment (Chan, Copeland, & Barday, 1997; Croteau & Bergeron, 2001; Henderson & Venkatraman) IT team delivers system and services that vital to the company's strategies and operations. At the output, executives can see contributions IT makes and IT customers are more likely to welcome and utilize IT resources.

Business value should not be seen as only a financial value although in the end run the final goal is certainly to generate revenue for the company. Business Value is the sum of the value provided to concerned parties, i.e. shareholders, customers/suppliers and employees. Balanced scorecard is one of the suitable framework to use because it looks at other perspectives than just the financial one. Nevertheless, it must be part of a process of evaluation to be successful

The company must outline clearly its vision, mission and strategy in building a BSC. These need to be communicated and passed on to the IT department in some way (Milis and Mercken 2003, Hu and Huang 2005). This is done by defining the IT strategy in alignment with the business strategy and bringing out which projects that will support the strategy.

In this article we look at the proposed design of the Balanced Scorecard and how it can be used to align business strategy and IT strategy. In particular, we have made a study of how the energy company ABC business unit uses their own scorecard method. We have related this to the Balanced Scorecard and compared how they have broken down strategies, objectives, targets and measurements on both the business and IT sides of the company to see if they have alignment between business and IT. We have analyzed the results of the case study in two parts firstly, a review against the Strategic Alignment Model and secondly, against a Balanced Scorecard as defined by Kaplan and Norton. We see how PT ABC has or has not accomplished alignment by the difficulty to breakdown IT strategies to lower levels and keeping them aligned with the business strategy.

ABC Indonesia Business Unit is a business unit from global energy corporation that operate diverse energy sources from oil, gas and renewable energy in Indonesia. To adhere production sharing contract between Government of Indonesia and contractor, ABC need to report all work program and budget to government body called SKK Migas. This also make additional alignment strategy for IT team in ABC besides alignment between IT and business but also alignment between IT and government body.

Many companies adopt the Balanced Scorecard but for it to gain success from an IT point of view there should be an alignment with the IT. The Balanced Scorecard for IT should be created and need to be broken down to business unit or lower level. Figure 1 show measures that is defined at each level.

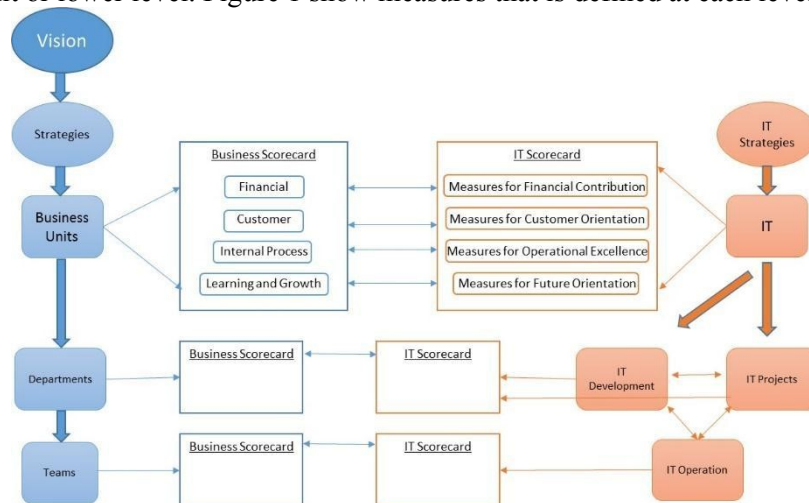


Figure 1. Alignment of IT with Business BSC

In this way, the whole enterprise can pull together in the same direction to achieve its business purpose. We focus on how ABC has implemented its business and IT strategy and the scorecards they have defined to follow and to propose balanced scorecard that will make better alignment.

## Research Approach

We have conducted a literature review and critical analysis of the BSC and different methods used in combination with it. We have made a case study, analyzing how fine the business and IT align by linking and examining their individual balanced scorecards.

Due to information protection at company, we took ABC as company name. The author of this paper is employed by and works “inside” ABC Company. The reasons for choosing the ABC were because they had implemented scorecards on both the business and IT and never been assessed alignment between the two.

The research methodology is fundamentally explanatory case study (Walsham 1995). All information regarding ABC Company were composed by reading different types of documents available through the author who is working at the company.

Analysis and evaluation between data sources were assisted by the widespread context access which let us reconfirm problems. This both strengthens validity and reduces prejudices. Workshops were used to confirm findings and enhance our understanding of certain problems

### **Theoretical framework**

#### **Business Value of Information System**

There is no commonly agreed business value definition according to Grembergen in 2001. Cronk and Fitzgerald (1999) define “IS Business Value” as “the sustainable value added to the business by IS, either collectively or by individual system, considered from an organizational perspective, relative to the resource expenditure required”. Lundberg (2004) defines business value as consisting of two different types, value in the business itself and value in the form of reduced IT costs and can be calculated as the sum of four components: The cost savings after the introduction of an IT solution, Increased revenue after the introduction of an IT solution, Increases in key quality indicators used in the business, Difference in cost of IT since the change.

Business Value should be the difference in the value of the business after a change that has been made to that business. (Future Value - Current Value). This can be due to any type of change not necessarily IT. Another definition of the evaluation process given by Willcocks (1992) “is about establishing by quantitative and/or qualitative means the worth of IS to the organisation bringing into play notions of cost benefit, risk and value”. According to Cronk & Fitzgerald (1999) to understand “IS Business Value” one must first define the meaning of the term, which they do as: Value + Value for Money. They define the dimensions of Value as System, User and Business dependent. This is in line with Norton and Kaplan’s thinking with the Balanced Scorecard that there must be other dimensions than just financial ones.

#### **Strategic Alignment**

Lack of alignment between business and IT strategies of organizations is the main cause of the failure to realize value from any IT investments explained by Henderson and Venkatraman (1999). This strategic fit is inherently dynamic and strategic alignment is not an event but a process.

When business can utilize IT functionality on a continuous basis then it can acquire competitive advantage. Lederer and Salmela (1996) stated that if the implemented project fit the business objectives, it is said to be an alignment between the two. Alignment is the degree to which the information technology plan follow the business plan, King (1978). Alignment can be seen as the degree to which the planning process resulted in strategic information technology. Lederer and Salmela (1996) stated that alignment represents realization of goals.

Four dimensions of the Strategic Alignment Model consist of Business strategy, Information Technology strategy, Organizational Infrastructure and Processes, and Information Technology Infrastructure and Processes. It is a model for conceptualizing and address the area of strategic management of Information Technology. Strategic fit means the interrelationships between external and internal components and functional Integration is the integration between business and functional domains. These two are the fundamental characteristics of strategic management. The management must

The potential for IT impact is so varied and complex that the management must consider all these perspectives as alternative conceptual views and be prepared to continuously make adoptions (Henderson and Venkatraman 1999). This model determines two types of integration between Business strategy and IT strategy. Operational integration terms internal components while Strategic integration terms external components. In this paper, we will find any of the four perspectives of alignment, Strategic integration or Operational integration in the Balanced Scorecard approach.

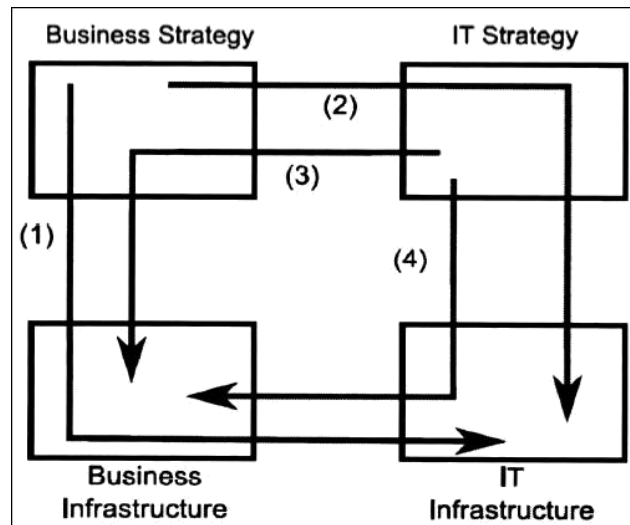


Figure 2. Strategic Alignment Model (Henderson and Venkatraman 1999)

### Balanced Scorecard

To measure company performance, Kaplan and Norton introduced the Balanced Scorecard (Kaplan and Norton 1992). The conclusion of Kaplan's and Norton's scorecard is that it measures a company's performance in other than strictly financial terms, namely a customer perspective, an internal business process perspective, a learning and growth perspective and a financial perspective. It is a guideline to describe value-creating strategies that link intangible and tangible assets. Many major enterprises in manufacturing and service branches, non-profit organisations and government entities are using The Balanced Scorecard as a framework to manage company performance management (Kaplan and Norton 2001, Kaplan and Norton 2001b, Kenny 2003, Ganem et.al. 2002).

The BSC started from the business strategy and then each business unit can create its own sub-set of the Enterprise BSC where it classifies the strategies of the unit in line with the strategies of the Enterprise.

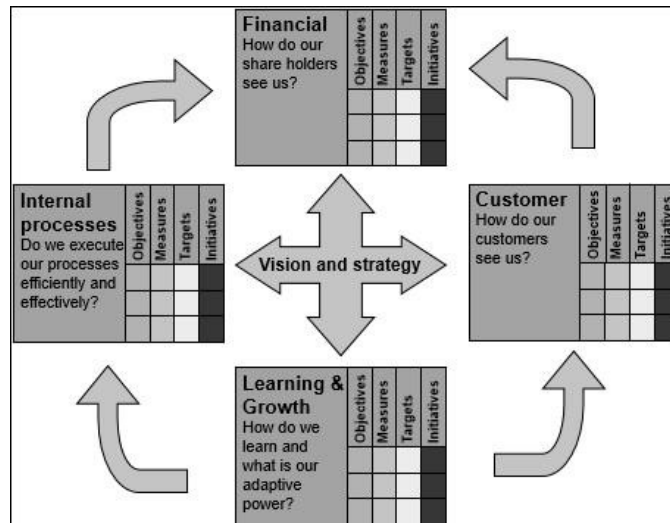


Figure 3. Balanced Scorecard

The meaning of the four perspectives in Figure 3 are following:

#### **Financial Perspective**

The financial perspective of the Balanced Scorecard describes the tangible outcomes of the strategy in traditional financial terms. Measures such as return on investment, shareholder value, profitability, revenue growth, and cost per unit are lag indicators that can be used to gauge the effectiveness of an organization's strategy

#### **Customer Perspective**

The customer perspective defines the value proposition for targeted customers. It comprises a mix of core measures and performance drivers that allow organizations to measure value propositions they will deliver to chosen customers and market segments. Consistent alignment of actions and capabilities with the customer value proposition is the core of strategy execution.

#### **Business Process Perspective**

The Business Process Perspective reflects internal business processes. The processes in the internal perspective create and deliver value proposition for customers. These are the processes which must be performed to achieve strategic goals. In developing the internal perspective, companies identify the processes that are most important for successful execution of pre-defined strategies. For example, companies that follow a product leadership strategy will focus on excellence in the innovation process while those following a low-cost strategy must focus on operational efficiency processes.

#### **Learning and Growth**

This perspective of the Balanced Scorecard strategy map describes the organization's intangible assets and their role in strategy. These assets are further divided in three categories: Human capital, Information capital, and Organization capital.

#### **Case Study**

Company ABC is one of business unit of global energy company in Indonesia. ABC has five operating units run in several locations across Indonesia to produce energy and oil and gas. Besides operating group, there is a service supporting group consist of Human Resource, Financial, Information Technology, Planning and Supply Chain Management. Information Technology department at ABC company is under Planning and Technology organization that delivers IT services to five operating business in Indonesia. While its main function is to support operating business groups in Indonesia, IT must also have alignment with IT strategy from Enterprise ABC located in United States. It means there is dotted line between local IT department in Indonesia and corporate IT department in headquarter.

Two ABC operating groups in Indonesia are producing oil and gas in two different areas so it have to adhere to production sharing contract (PSC) agreement. One of important agreement in PSC contract term is called cost recoveryhu. Government Body called SKK Migas is monitoring all production cost spent by production companies due to it will be recovered by Government. It also impacts to IT activities in ABC that need to report IT operation and capital expenses every year. At that point, IT in ABC company will have three alignments consists of IT – Business alignment, IT – Enterprise IT alignment and IT – SKK Migas alignment.

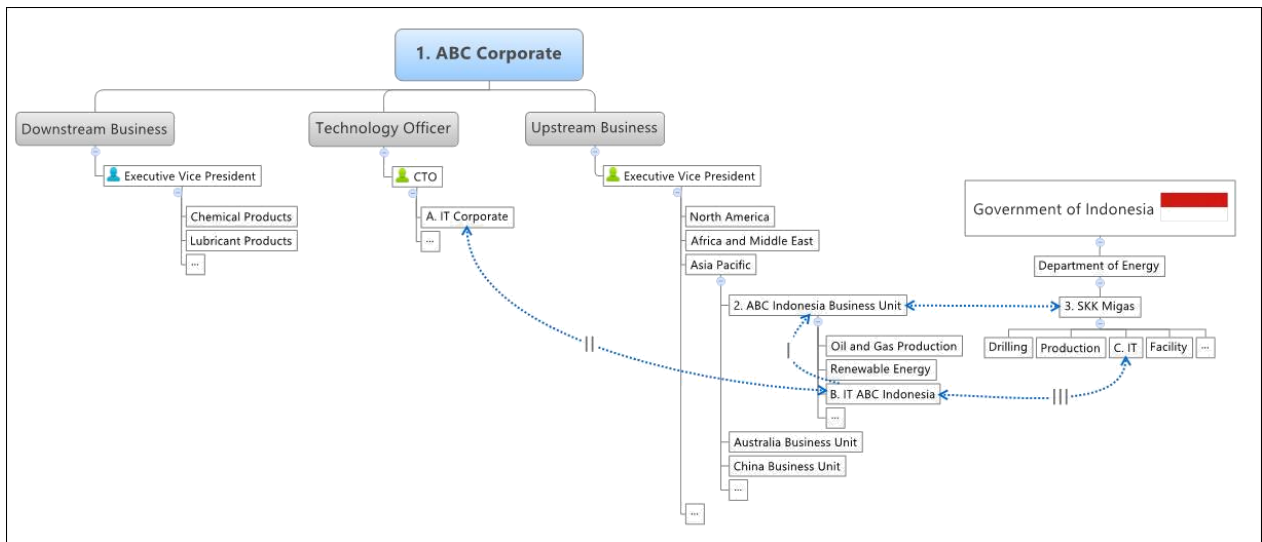


Figure 4. ABC Organization with focus on IT alignment

The number on the figure 4 show where we expect to find a business Balanced Scorecard and the letter show the document where we expect to find an IT Balanced Scorecard.

In the next paragraph of this chapter, we explain the kinds of information we have found on the different levels of the business and IT through the organization. The degree of alignment is discussed at the next chapter and if it has been cascaded top-down (1-2 and A-B) and horizontally (1-A, 2-B, and B-C).

#### Business – ABC Corporate (1)

ABC vision is to be the global energy company most admired for its people, partnership and performance. This means they safely provide energy products vital to sustainable economic progress and human development throughout the world; they are people and an organization with superior capabilities and commitment; they are the partner of choice; they earn the admiration of all stakeholders – investors, customers, host governments, local communities and our employees – not only for the goals they achieve but how they achieve them; they deliver world-class performance.

ABC Strategic Plan sets direction, aligns organization and differentiates ABC from the competition. It guides their actions to successfully manage risk and deliver shareholder value.

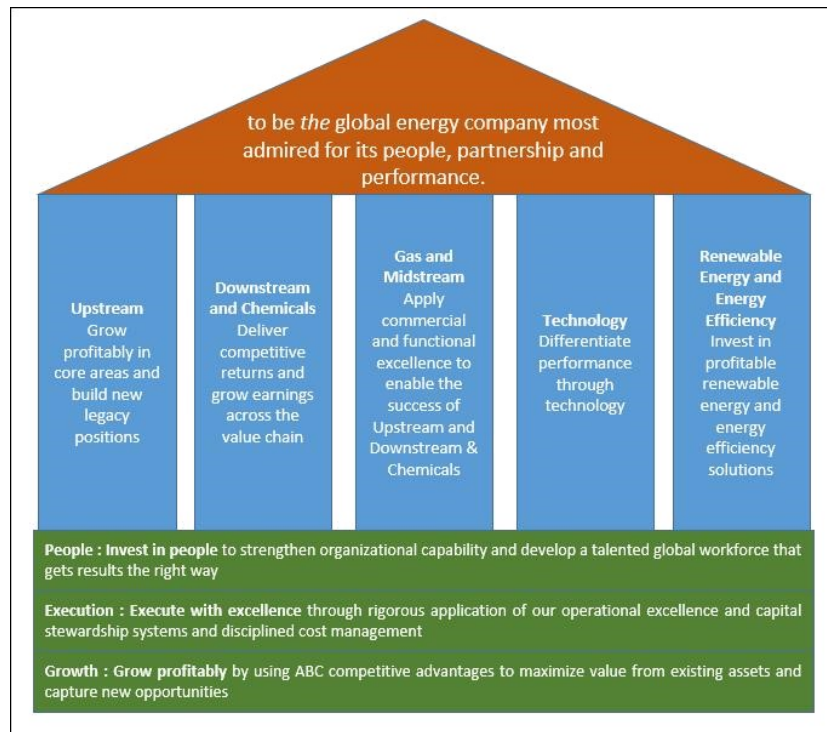


Figure 5 ABC Corporate Strategy

For each eight boxes several objectives have been identified and for each of these objectives metrics and targets are specified according to BSC type criteria.

Since ABC Company is resource based company, this shape their strategy focusing on internal business processes to deliver great financial results. People and technology become foundation to be excellence in executing internal business process.

#### Business – ABC Indonesia Business Unit (2)

ABC Indonesia has also eight strategies to support corporate ABC as shown in figure 6. Since ABC Company Indonesia need to have strong relationship with government of Indonesia, they put partnership as strategy to achieve their vision to be the first rank of energy producer company in Indonesia.

First strategy is focus activities on maximizing value and resource recovery from existing assets by maximizing production through accelerated infill drilling and work over programs. Seek to improve efficiency of power, heat and water management and responsibly abandon assets and restore the environment. Expand existing geothermal capacity. Second strategy is execute major capital project with excellence by delivering project within budget and schedule. Third strategy is moving renewable opportunities to development project. Fourth strategy is conducting exploration appraisal in several oil blocks in Indonesia to potential production block.



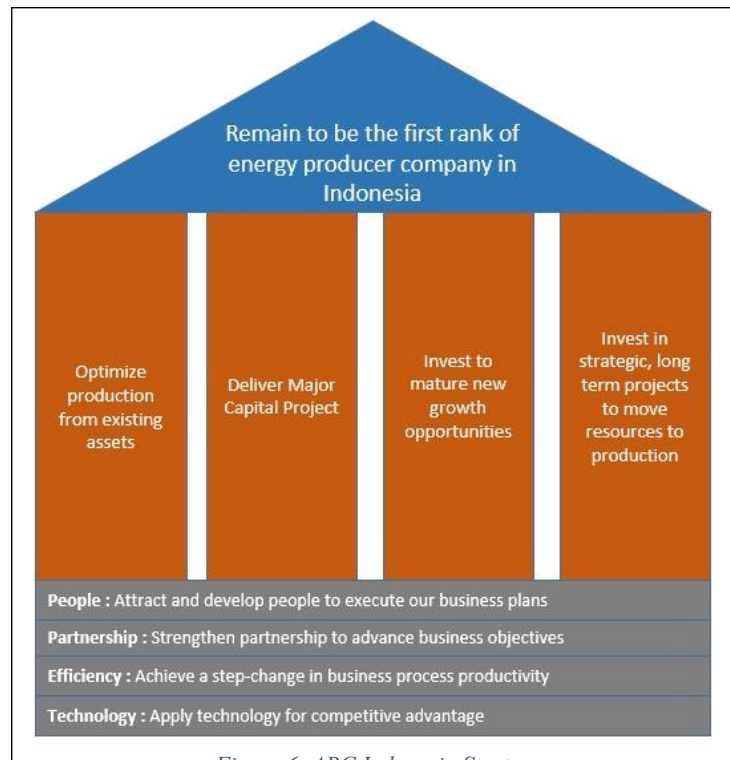


Figure 6. ABC Indonesia Strategy

Under-pinning the four Strategic Pillars are the Enabling Strategies that will help to deliver our base business, growth projects and new opportunities. First box is to attract and develop the right people at the right time to execute business plans. This strategy can be done by hiring, developing and retaining people to meet long term business objectives. Second box is to strengthen partnerships to advance business objectives. This can be done by implementing stakeholder management and engagement plans to secure timely support from key stakeholders. Third strategy is to achieve a step-change in business process productivity. The indicator for doing this is by improving fluency and executing shaping plans for key enablers. Fourth strategy is to apply technology for a competitive advantage by utilizing proven technology to improve recovery, enhance productivity and improve efficiency.

#### Regulator and Supervisor – SKK Migas (3 & C)

SKK Migas has IT division that control all activities from production sharing contract company. This mean that each year, IT department ABC need to have approval on operational and capital budget. SKK Migas. SKK Migas has mission to supervise and control contract execution to ensure effectively and efficiently upstream oil and gas activities for Indonesia people prosperity.

IT Division in SKK Migas has strategy to control IT implementation in all oil and gas contractors. To achieve SKK Migas strategy for developing national capacity, IT Division of SKK Migas propose local strategy to all contractors. This mean that all IT department in oil and gas contractor have to prioritize local product and technology in their IT systems and resources. This mean that they need to ensure that all products have local distributor and ensure that their human resources are from national.

#### IT – ABC Corporate (A)

ABC corporate IT has interpreted the overall business strategy into an IT strategy to differentiate business performance through information and information technology. From this vision, IT will deliver trusted information to connect people, partners and business in ABC Company, to accelerate business insights and to automate, integrate and optimize business operations. They put three objectives of all IT



team in ABC Company which are prioritize, simplify and integrate. These three objectives should follow in every IT projects. Figure 7 show how corporate IT vision translated into objectives with same mindset across all IT employees and business partners.

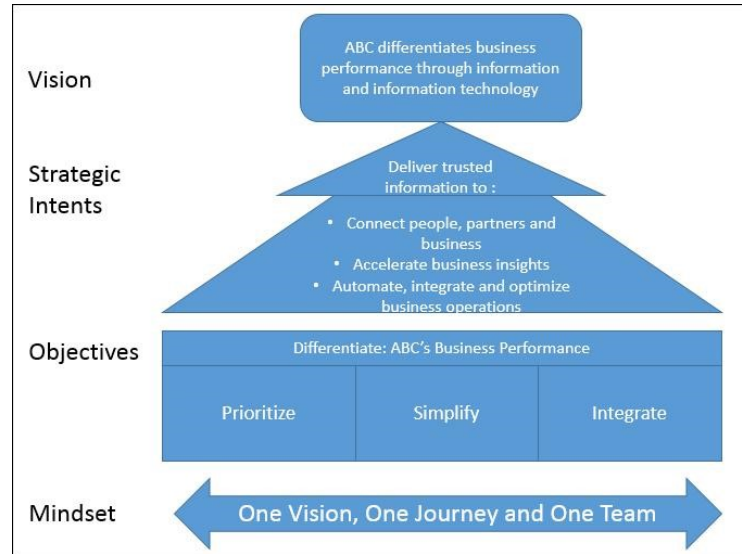


Figure 7. Corporate IT ABC strategy

#### IT – ABC Indonesia Business Unit (B)

IT in Indonesia Business Unit has decided its strategy based on ABC Indonesia Business Unit since functionally IT department has direct line to ABC Indonesia Business Unit. The vision of IT – ABC IBU is based on corporate IT ABC. They only have three strategies to accomplish its vision which are operational excellent in safety, run IT assets with excellence and integrity and improve ABC's high value business processes. From these three strategies, IT ABC IBU has defined eighteen KPI to measure each year. Seven indicators are categorized in safety operations, six indicators in running IT assets with excellence and integrity and five indicators reflecting ABC's high value business processes.

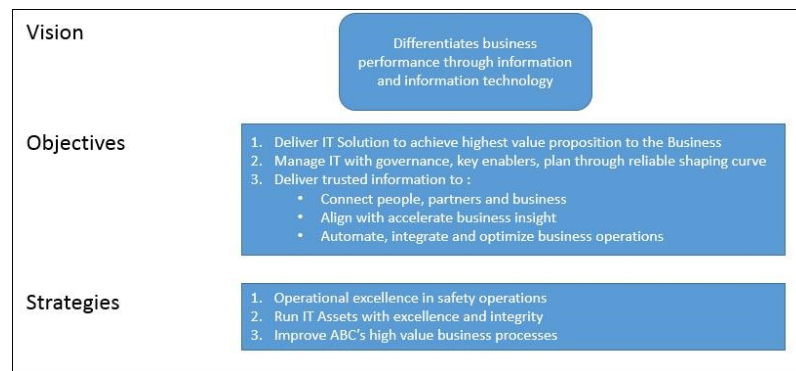


Figure 8. IT strategy at ABC IBU

#### Analyzing the degree of alignment

In this chapter we study the degree of alignment and if it has been cascaded top-down (1-2 and A-B) and horizontally (1-A, 2-B, B-C, see figure 9). In this model, the Balanced Scorecards of the Corporate are recognized on different levels of the organization on the business side and on the IT side and the IT equivalent of the business side is identified. The BSC should be analyzed both vertically (business or IT understanding of the corporate Strategy and objectives) and horizontally (IT alignment with the business).

In this case, we see additional alignment between IT department in IBU with IT division of government supervisor body i.e SKK Migas. IT department of ABC IBU need to have three alignments vertically and horizontally.

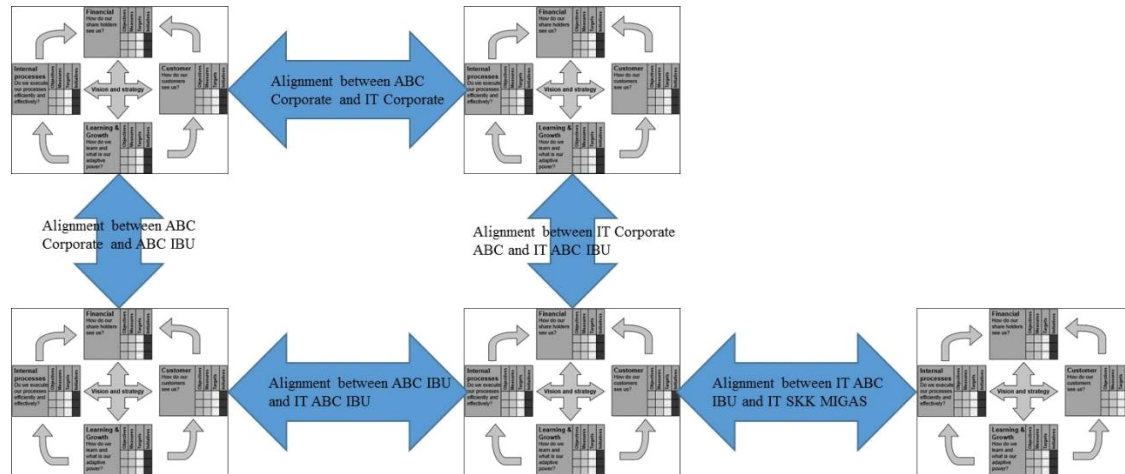


Figure 9. Alignment of strategy and objectives through BSC for IT ABC IBU

The documents defined previously are all associated to the strategy and objectives documents that are freely accessible to ABC employees over their Intranet. We examine if the business documents can be aligned with each other and if the IT documents can be aligned with each other and thereafter if the IT documents can be aligned with the respective business documents.

#### Business Strategy Cascade (1-2)

When comparing the strategies and objectives of the organization from Corporate ABC level (1) to Indonesia ABC (2) we find that there is a tight fit. The metaphor of a house is used by all business units and we find a general agreement in the IBU Strategy and Objectives that are defined in the Group Strategy and Objectives.

When trying to map the level 1 documents to a standard Balanced Scorecard we do not find a good match. The methodology used is not certainly balanced and multi-criteria. Besides that we also find a lack of intangible objectives and only financial, internal business process and learning and growth targets and measures. The missing perspective of balanced scorecard between corporate ABC and Indonesia ABC is customer perspective.

#### IT Strategy Cascade (A-B and B-C)

We see that the IT Strategy and Objectives (A) has also loose fit between Corporate IT strategy to IT IBU. This evidence because three main objectives i.e prioritize, simplify and integrate are not mentioned in IT IBU objectives. One missing perspective is about customer perspective that still not exist in both IT strategy. The measurement and targets for IT Corporate and IT IBU focus only with internal business processes and learning and growth.

We could not see any clear connection though between the levels A (Corporate IT) and B (IBU IT) though operational excellence is mentioned in both. And also there were no documents defined at C (IT SKK Migas).

#### Business and IT Alignment

##### Business Strategy and Objectives to IT Strategy and Objectives (1 to A).

When linking the Business Strategy and Objectives (1) against the IT Strategy and Objectives (A) we find sensible alignment that the IT strategy and objectives are derived from the business. We can see that in the corporate strategy “house” there is strategy in technology i.e differentiate performance through technology. This strategy captured by corporate IT as a vision i.e differentiate business performance through information and information technology.

We find the “house” metaphor in both organizations. This specifies Strategic Integration according to Henderson and Venkatraman (1999). When reviewing the documents against Henderson and Venkatraman (1999) we find in the external components no mention of Systemic Competencies but IT Scope and IT Governance are described. In the internal components, Corporate IT mention architecture, processes and skills. Currently Corporate IT have policy to standardize IT architecture across corporate worldwide. This process has purpose to ensure business alignment between IT and business.

IBU Business Strategy and Objectives to IT Strategy and Objectives (2 to B).

IT business strategy is only focus only one operational excellence perspectives and not aligned with the business unit. There is no adoption of others perspective from IT Corporate to provide services to Indonesia business unit. The scorecard is not balanced because of this matter. The performance of IT department is questioned by business because of many complaints about IT services.

IBU IT Strategy and Objectives to SKK MIGAS IT Strategy and Objectives (B to C)

We found no alignment between IBU IT strategy and objectives and SKK Migas IT strategy and objectives.

### **Summary**

We discover that apparent the IT strategies and objectives are derived from ABC business strategies and objectives and there appears to be some alignment, but on deeper analysis we find very slight true alignment and that in fact it seems that each organization has worked more or less independently of the other. The strategy “house” is being used to align scorecard among corporate and business unit.

Unfortunately IT ABC Indonesia is not using this framework to decide their strategy.

We also find that ABC Company is not using balanced scorecard to measure their performance. They use their own scorecard that similar with balanced scorecard but missing customer perspective. This make IT organization that has core task to deliver services to customers is missing their excellent services.

We also find difficulties whether the IT projects defined are in line with the overall Corporate Strategy and Objectives, as we cannot find out who the participants were for the identification of the projects though the governance model states clearly this is a business responsibility.

We can conclude that the Strategic Alignment Model enhances great load to the alignment process and that ABC could perhaps acquire some good value by working on the Competitive Potential and Service Level perspectives.

A company can still be effective and cost-effective despite a loosely documented alignment of strategies and objectives because there is a “glue” which connects business and IT department built upon other communication approaches e.g management, values or other simply conversation to each other. There should be a good understanding of the business value to be made by the objectives and the measurements should be based on this business value.

The Balanced Scorecard must be based on a vision, mission and strategy and they should be aligned between business and IT. The BSC in a large company should comprise the same perspectives to enable alignment even though it should be possible for business units to add their own specific or remove unrelated perspectives instead of trying to search projects to map to an irrelevant perspective. Aligning separate IT portfolios with the suitable (business unit) BSC and to link personal goals to it also encourages alignment and co-ordination in the company.

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