Patterns for Describing IT Value In IT Strategy Maps & IT Balanced Scorecard

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Abstract: IT Balanced Scorecard (IT BSC) and IT Strategy Maps (IT SM), both descendants of Balanced Scorecard (BSC) and Strategy Maps (SM), are tools to help IT managers to show value of IT, communicate how IT contributes to the organization performance, and also coordinate activities within the IT organization. However, currently the development of IT SM literatures lags far behind the business SM counterparts. Although Kaplan & Norton (2001) has introduced the concept of client value proposition in IT Strategy Maps, equivalent to customer value proposition, we believe there are many other ways to describe IT value in IT BSC/IT SM. Based on literary study and empirical case studies on several organizations, in this paper we explore the patterns of how IT value proposition can be described and pictured within the IT SM. We group those patterns into IT values that relates to the application of IT; how IT value relates with cascaded & linked strategic objectives; and also how IT values are described in BSC’s perspectives.

1 Background

1.1. Balanced Scorecard and Strategy Maps

In 1992 Robert Kaplan and David Norton presented their first idea of balanced scorecard, as a tool to measure the performance of an organization. In their book The Balanced Scorecard (Kaplan & Norton, 1996), they also showed that it is also a new strategic performance management system which includes planning, execution and monitoring phases. Kaplan and Norton subsequently learned that to achieve breakthrough performance, organizations that used Balanced Scorecard needs to align and focus (Kaplan & Norton 2000, Kaplan & Norton 2001). The concept of strategy maps in their second BSC book came after they saw managers that uses BSC, intuitively draw cause-effect relationships among strategic objectives. Strategy maps helps organization to align the strategic direction of the organization with the execution of the strategy, in other words, it helps executives to manage their strategy better. It is also visually appealing to managers, because now everyone sees where and how they contribute to the organization performance.

1.2. Customer Value Proposition

As Kaplan & Norton (2001) give describe, the core of any business strategy is the “value proposition” delivered to the customers (see figure 1). It describes the unique mix of product, price, service, relationship and image that the provider to its customers. A clearly stated value proposition provides the ultimate target on which the strategic themes of critical internal business process and infrastructures are focused through a cause effect relationship.

The value proposition is represented in the customer perspective in the BSC, and they found that it fits nicely with Treacy and Wiersma (1993) three patterns of generic strategies of how companies command market leadership:
1. Product leadership: “…pushes its products into the realm of the unknown, the untried, or the highly desirable.”

2. Customer intimacy: “… builds bonds with its customers, it knows the people it sells to and the products and services it needs.”

3. Operational excellence: “… deliver a combination of quality, price and ease of purchase that no one else can match.”

The value proposition itself is translated into the strategy maps through strategic themes. The strategic theme is reflected in the objectives the internal perspective and learning & growth perspectives. Strategic themes reflect what the management believes must be done to succeed. It reflects the executives’ view of what must be done internally to achieve the strategic outcomes that the company wants to achieve.

1.3. Early development of IT Balanced Scorecards

The balanced scorecard can be applied to the IT function and its processes as Gold (1992, 1994) and Willcocks (1995) have conceptually described and has been further developed by Van Grembergen and Van Bruggen (1997) and Van Grembergen and Timmerman (1998). In a later paper, Van Grembergen (2000) demonstrated that (a) the Balanced Scorecard can provide a measurement and management system that supports the IT governance process and the (b) business scorecard can be cascaded to IT Balanced Scorecard (IT BSC), and further cascaded into IT development scorecard and IT operations scorecard. The first real world case use of IT BSC at a Canadian financial company was described by Saull (2000) and also by Van Grembergen & Saull (2001).

1.4. IT Strategy Maps & Its Client Value Proposition

The first IT Strategy Maps (IT SM) was introduced by Kaplan & Norton (2001) with a case study at the IT unit of Financial Services Company. It already has what they call client value proposition within the IT Strategy Maps. The client value proposition is divided into basic objectives and differentiated objectives specific to the needs of the internal clients. Gold (2003) extended their IT Strategy Maps by conceptualizing the IT Organization (ITO) Scorecard Strategy Maps. Soon, Norton
readopted Gold’s idea and went into print in CIO Insight (2004). This work in turn was again mentioned again by Symons (2005) of Forrester Research.

In Kaplan & Norton latest book, Alignment (2006), they presented IT Organization Strategy Maps (see figure 2), which is largely based on Gold’s ITO Scorecard Strategy Maps with a few adjustments. Notable additions are the integration of Strategic IT Service Portfolio concept first introduced in Strategy Maps (2004), reintroduction of linkage scorecard (first presented in Strategy Focused Organization) and also the possibility to cascade the ITO strategy maps to units within the IT Organization (such as planning function, help desk function, maintenance function, etc.).

2 Objective of the Study

Kaplan & Norton since 2001 has introduced the concept of customer value proposition and client value proposition in their IT strategy maps. It is imperative that we understand the value proposition of IT organization before we move on to explore deeper into IT SM, because having a value is the primary reason why the IT organization should exist after all. It also defines the IT strategic themes, i.e. what should internally be done within the IT organization to deliver the promised value. However, we argue that it is not the only value that might be described using IT Strategy Maps and IT Balanced Scorecard.

The objective of this study is to explore several approaches to describe the value of IT organization using IT BSC / IT SM. In other words, we want to study what are the possibilities and patterns to describe and picture IT value in IT BSC / IT SM.

In this paper, similar to original 2001 term, we intentionally simplify the term IT Organization Strategy Maps into IT Strategy Maps, thus making those terms equivalent and interchangeable.

3 Methodology

This paper is based on a number of case studies at several organizations, led by the authors under IT Governance Lab, Faculty of Computer Science, University of Indonesia. It was an explorative and qualitative research, because we want to find new ideas in the IT BSC / IT SM family of theories. The researches were mainly conducted during the second half of 2006 and early 2007. There were 5 IT SM case studies in this batch of research: Ministry of Marine & Fishery, Banten Provincial Government, Directorate General of Customs & Excise (DGCE), an engineering procurement company (P.T. Industrial EPC), and a metering instrument manufacturing company (P.T. Electric Meter). We intentionally cover up the names of limited liability companies (P.T.) to protect the anonymity of the unit of analysis.

The case studies research design was carefully designed by the authors. The case study research observation guide and the interview guide were developed based on strategic management issues (Wheelen & Hunger, 2002); BSC/SM/IT BSC/IT SM from Kaplan & Norton series (2001; 2004; 2006); Van Grembergen (2000), and some additional questions from Weill & Ross (2004). The research assistants then collected data. The informants in those case studies are mainly the IT managers, and in some cases we had access to the other functional managers or business unit managers. The author then reviewed and qualitatively analyzed the data with the research assistants. During the interaction amongst the research subject, the data collector and the author, variations were allowed to fit the IT SM contextually for each research subject. At the end of the research, we held a workshop to extract findings and even new hypothesis from the case studies.

While we also uncovered many new discoveries during our study, in this paper we only show one of the results, namely the IT value propositions. Among other findings not described in this paper

1 P.T. stands for Perseroan Terbatas, roughly equivalent to the United States term for Limited Liability Company (LLC)
include: the use of COBIT IT process in the operational perspectives of IT SM, the shape of the IT SM itself (reflecting the paradigm), the IT strategic themes, and IT governance patterns based on Weill-Ross (2004) model.

4 Discussion

4.1. Patterns of IT Value from Applications

Kaplan & Norton (2004) did not mention IT value proposition in their Strategic Information Capital (renamed Strategic IT Service Portfolio in 2006). However we claim that applications that spring from the Strategic IT Service Portfolio matrix are also the IT value propositions for the organization/business (see figure 3). It directly addresses the business scorecard needs of applications. Because a strategic objective will not make it to the corporate/business SM/BSC unless it is important for the organization, then the application (along with the information processed therein) needed to support each strategic objective is important for the organization. Unlike Kaplan & Norton’s (2001) client value proposition, we argue that value proposition of IT primarily emerges from the applications that support its business processes.

![Figure 1. Kaplan & Norton’s (2004) Strategic Information Capital example, subsequently renamed Strategic IT Services Portfolio in Kaplan & Norton (2006)](image)

We then found that we could detail out, for each business unit scorecards, their respective IT Service Portfolio. The applications (or application modules) that emerge from their respective IT Service Portfolio matrix provide the value of IT. Case study at P.T. Industrial EPC used this approach to populate their business unit’s application needs. The development of Strategic IT Services Portfolio can also be done for each functional unit scorecards.

If we agree that applications are the value propositions of IT, then it is worth to note Ward’s (2003) technique to construct a comprehensive set of IS needs. By using measures from the strategic objectives of BSC’s perspectives and CSF analysis, it is possible to develop complete IS Needs (application requirements) to support the strategic objectives. In the example depicted in figure 4, a strategic objective (‘to reduce stock cost’) provides the reason for the need for a new logistic
information system. The new system must also be able to measure performance of the strategic objectives.

4.2. Patterns of IT Value Cascaded/Linked from Other Scorecards

Apart from describing IT value from application description in IT BSC / IT SM, we also had to examine the IT BSC’s financial perspective (or business contribution perspective in van Grembergen’s term) and also customer perspective (or user orientation in van Grembergen’s term), since we think that the IT value proposition must come from these perspectives too.

![Graphical view of linkage scorecard and delegation](image)

Figure 2. Graphical view of linkage scorecard and delegation

If we assume that IT organization is a shared service unit (SSU) – i.e. a unit within a company that serves other units, especially strategic business units (SBUs), then as Kaplan & Norton (2001) showed, the some of SBU’s strategic objectives in the financial and customer perspective can be cascaded or linked down to the financial and customer perspective of the SSU (for example, e-commerce marketing targets). Therefore, it is possible if an IT organization wants to have some ‘acknowledgement’ or ‘appreciation’ from SBUs, and if the managers sees IT as the prime enabler for the SBU’s target be achieved, then using a linkage scorecard, the SBU’s strategic objectives can be included in the IT scorecard. We can argue that through the linkage scorecard, the IT organization brings its value.

In the case study at General Directorate of Customs & Excise (GDCE) we discovered that the General Director responsibility to collect duty can be cascaded/linked down to Directorate of Customs & Excise Information (structurally located one level directly under the General Director of Customs & Excise), since it is nearly impossible nowadays to collect duty and process the financial information for reporting to the Finance Minister without computers. We define the strategic objective of the organization being delegated to its inferior ordinates in a term we coined ‘delegation scorecard’. The Directorate of Information value is that it enables GDCE to collect and report the duties. Please note in figure 5, we cascade & draw the linkage scorecard and the delegation scorecard directly into the perspectives of the IT BSC, not through a separate ‘scorecard’. We believe this approach is less complicated rather than develop another scorecard used for the sole purpose of linking two scorecards.

An interesting development came from Van Grembergen, De Haes and Moons (2005), which then the idea was incorporated into COBIT 4.0 (IT Governance Institute, 2005). They conducted interviews managers at eight different industries in Belgium to capture the link between business goals and the IT goals, then cascade it down again to the 15 most important COBIT IT processes. Interestingly enough, they use BSC perspectives to place the business goals. While they did not use IT BSC, we argue that
several IT goals cascaded from each business goals can be considered as the IT value proposition, worth placing them as strategic objectives in the financial or customer perspective of IT BSC.

4.3. Patterns of IT Value within BSC’s Customer Perspectives

In one of our case study, just by interviewing key business unit managers, and discussion with the corporate planner, we were able construct what are their expectations from IT organization. We simply put the expectations into the strategic objectives in the customer perspective of the IT SM. We consider this expectation is the value proposition of IT for the organization.

We also discovered another way to write down the IT value proposition by simply placing the IT organization’s official duty, accountability and responsibility as the strategic objectives in the customer perspective of the IT SM. It is very simple, but we believe this approach is still valid, although we need to select which ones are applicable for the customer perspective, and which ones are for the other perspectives.

In several of our cases, we acknowledge that Gold’s model for customer’s perspective as explained by Kaplan & Norton (2006) is quite applicable. Gold argues that typical IT organization follows a sequential strategy of successively satisfying business hierarchical needs. The IT organization starts by demonstrating its competency in delivering consistent, reliable and low cost basic service. Only then, the IT organization earns the right to develop capabilities to build alliance with business units by offering applications to support business unit strategies. The highest level of IT value is when IT customizes emerging technologies to position the business unit for distinctive competitive advantage. Please refer back to figure 2. Gold (2003) used this model for his T. Rowe Price Investment Technologies IT organization BSC. In three out of five of our cases, where IT organization has not matured enough, basic service dominates the IT value proposition, reflected in their customer perspective of their IT SM.

Previously during the very early stage of the research, the author devised a strategy map template where the customer perspective consists of information criteria from COBIT (IT Governance Institute, 2005). As we know, to achieve business objectives, information needs to conform to certain control criteria, which COBIT refers to as business requirements of information. The information criteria are defined as follows: effectiveness, efficiency, confidentiality, integrity, compliance and reliability. We did find that some wordings that emerge from the case studies use adjectives to explain a noun or a concept. For example, many organizations would want a reliable basic service. But notice that the templates for business customer value propositions are nouns, not adjectives. As a matter of fact, in COBIT, we will also find information resources – i.e. applications, information, infrastructure and people. We propose that combinations of information resource and information requirement may be the basic foundation of the customer perspective for IT SM template (e.g. ‘efficient processing service’). Note that a mapping from business goal to information criteria is also available in COBIT 4.0.
4.4. Remarks

While literatures on strategy emphasizes more on efficiency and effectiveness, we did recognize that in certain industry, compliance to certain standards is mandatory, and business depends on its capability to at least meet the regulations in place. For example, airline and construction companies must abide safety regulations. In banking industry, not only banks must comply with central bank regulations, it also need to calculate its risk profile. Therefore if IT can support the organization to keep up with the regulations (e.g. by opting for a modular IS/IT design to flexibly adapt to changing government regulations), and also help the organization to minimize risk (e.g. by using a risk analysis & monitoring application). Therefore rather than simply reducing the strategic objectives in the financial perspectives of IT BSC / IT SM into two groups (efficiency & effectiveness), we can complement it with strategic objectives related to compliance and risk. While those groupings are not the IT value themselves, but the grouping makes it easier to place strategic objectives into the perspective.

One of our case study in Banten Provincial Government uses a somewhat a modified model of ITO Strategy Maps. Kaplan & Norton (2001) also showed a case of ‘business-in-business’ model of a shared service unit (SSU). The business-in-business model, actually allows business units to procure their needs from outside the organization. Therefore, the IT organization, as an SSU, has to compete with other possible external IT providers. Although not of our interest here, they showed that it is possible to construct an IT strategy map without the need having the business BSC or SM in the first place. This technique, of course, is also applicable to not just to business-in-business model. For example at Banten Provincial Government, the IT organization works as a service centre unit supporting other functional units. As a matter of fact, Kaplan & Norton’s (2001) example of their first IT SM at Financial Services Company is also using ‘business-in-business’ model of an IT organization. There is a caveat though: by using this approach to develop IT SM, we cannot develop the corresponding Strategic IT Service Portfolio matrix (the most apparent IT value proposition), because we do not have the business BSC/SM.

5 Conclusion

To recap our discussion, we have collected and uncover ideas from literary study and empirical case studies, of what are the patterns of describing IT value in IT BSC & IT SM. Among them are:

1. Patterns of IT Value from Applications
   a. Strategic IT service portfolio matrix
   b. Business unit IT service portfolio matrix
   c. Functional unit IT service portfolio matrix
   d. Ward’s (2003) IS needs based on BSC-CSF.

2. Patterns of IT Value Cascaded/Linked from Other Scorecards
   a. Strategic objectives in the linkage scorecard
   b. Strategic objectives in the delegation scorecard (a new term that we coined).
   c. The concept of IT Goals introduced in COBIT 4.0 and Van Grembergen, De Haes and Moons’ (2005) article.

3. Patterns of IT Value Within BSC’s Customer Perspectives
c. Simply asking the business managers what are their expectations from the IT organization in their company.

d. Using the COBIT information resource and information requirement as the basic template developing IT value proposition.

From these findings, we will use them to amend the data collection guide and also the guide for data analysis. It will then be used for the second batch case study research, yet to improve the IT strategy maps model. Another interesting research opportunity in this area is to find the correlation between customer value proposition and IT client value proposition with a large sample survey.

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Reference


Van Grembergen, W., Steven De Haes and Jan Moons, ‘Linking Business Goals to IT Goals and COBIT

